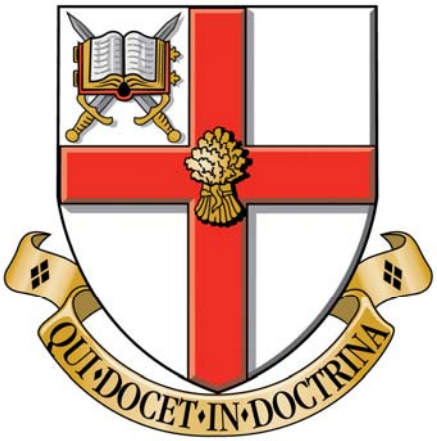

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Emergency life support training for school children

Exploring local implementation and outcomes of the Heartstart UK School Programme within the context of the National Healthy School Standard

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Executive summary

Introduction

Heartstart UK is an initiative co-ordinated by the British Heart Foundation, designed to increase emergency life support (ELS) training throughout the United Kingdom. The rationale for the development of the initiative is based on the idea that by educating the public to perform ELS skills, lives can be saved. This research project focuses on the implementation of the initiative in the school setting. That children and young people should be the target for ELS training rests on the assumption that they are often at the scene of emergencies and, if adequately trained in ELS, can be as capable as adults in applying ELS skills. Furthermore, the school provides an environment within which the teaching of ELS can be delivered in a structured way, as part of the curriculum, and with opportunities for practical activities. The National Healthy School Standard (NHSS) is the current vehicle in England through which all healthy schools work should be co-ordinated and might offer a valuable framework within which the topic of 'safety' in general and ELS training in particular could be delivered. The opportunity for a limited number of schools in Cheshire to participate in a pilot Heartstart UK project provided the circumstances for evaluating this work.

The aims of the research

This research project was designed to focus on both the implementation of the Heartstart UK initiative in a number of local schools within the context of their healthy schools programme and the NHSS, as well as explore the extent to which training children in ELS led to the desired outcomes.

Study design

This was a relatively small-scale study, which involved six schools, five primary and one secondary school. Fieldwork comprised nine semi-structured interviews with Heartstart UK trained teachers; five focus groups (with a total of 36 children), a questionnaire survey (101 children) and observation work with 36 children and young people (28 from primary and eight from secondary school) all of whom had participated in the Heartstart UK initiative.

Ethical approval to conduct the research was gained from the Centre for Public Health Research Departmental Research Ethics Committee on 24th June 2003.

Main findings

Teachers' perspectives on the Heartstart UK initiative

- All of the interviewees perceived the Heartstart UK programme to be worthwhile and well-conceived and would be continuing with the programme in the future, either delivering the programme in the current format or developing the programme to meet the individual needs of their school and pupils.
- Teachers commented favourably on the resources and described a variety of different ways in which the programme had been integrated into the curriculum.
- The flexibility of the teaching materials, the quality of the resources and access to training were identified as important by interviewees.
- Teachers said they valued the training but thought that a prior qualification in first aid was required. They thought that this would increase their own competence and confidence to teach ELS.
- Teachers expressed the view that giving children opportunities to learn ELS was important.
- The NHSS was perceived to be a valuable framework for helping the school focus on its priorities in respect of safety as a theme.

Children's perspectives on the Heartstart UK initiative

- Most children reported that they had not been exposed to ELS training in other settings and therefore had little knowledge of ELS prior to the implementation of the Heartstart UK initiative in their school.
- Children described learning ELS as 'fun'. They also described feelings of self-worth as a result of having developed new skills and said they were more likely to offer help in emergency situations. They also said that learning ELS skills gave them a sense of personal responsibility and made them feel that they were trusted.
- Children also reported that they might not have the confidence to put themselves forward in a real life situation. This was particularly true of younger children, who also expressed some concerns about their own safety in such situations.

Children's knowledge of ELS

- Generally, the children demonstrated relatively high levels of knowledge about ELS. For most questions, between two thirds to three quarters of children in the study responded correctly.

- The questionnaire revealed four areas where their knowledge was weaker: what to do when someone is choking; the meaning of CPR; whether or not rescue breathing was always performed with chest compressions; and, the first rule for helping in an emergency.
- The area where children's knowledge was weaker suggests that more complex skills that are based on a sequence of actions can be confusing.
- Thinking about the order in which actions should be carried out must be understood by children within the context of an appreciation of the need for prompt action, balanced against the necessity for a considered response.
- This highlights the need for any training programme to be structured and resourced to allow regular repetition of skills and adequate opportunities for refreshing learning.

Children's performance of ELS

- With the exception of the recovery position, where less than 50% of participants correctly performed the procedure, most of the participants were able to perform ELS skills with a good level of accuracy. This was particularly the case with regard to opening an airway and the ability to check for breathing.
- While some of the primary school children seemed nervous at performing ELS skills, the secondary school group exhibited confidence in their abilities.
- Given encouragement, many of the primary school children performed the skill adequately. Encouraging the development of confidence in young children to perform ELS skills is therefore important as this will increase the likelihood of children acting in an emergency situation.
- Confidence is likely to develop in parallel with competent skill development but, in addition, teachers might actively address this in their teaching of ELS.
- Evident in both the observations and the focus groups was the difficulty children encountered in putting a casualty in the recovery position.
- Structured skills that are dependent on a sequence of actions pose the most difficulties for children.

Conclusions

This small-scale study of local implementation has revealed the ways in which the Heartstart UK initiative has been integrated into healthy schools work using the NHSS as a framework for delivery. This has enabled participating schools to prioritise safety as an issue. The flexibility of the Heartstart UK initiative and the

quality of resources and training were perceived by teachers to be important in enabling schools to integrate the initiative into the school setting. Successful integration is likely to be important in generating an effective learning environment for children, which in turn, makes it more likely that the desired outcomes will be achieved. It was evident that whilst children developed ELS skills, they also reported that they felt more confident to act appropriately in emergency situations and that this lead to feelings of self-worth. This suggests that the Heartstart UK initiative could have an important role in contributing to citizenship education. This study has also revealed the difficulties children and young people can experience with ELS skills learning and has identified a number of issues that might be worthy of further consideration in any future revisions of the teaching materials for schools.

Chapter 1
Introduction

1.1 The Heartstart UK initiative

Heartstart UK is an initiative co-ordinated by the British Heart Foundation (BHF) and was developed specifically to increase emergency life support (ELS) training throughout the United Kingdom (UK). ELS is defined as "the set of actions needed to keep a person alive in an emergency until professional help arrives" (BHF, 2003, p. 4). The rationale for the development of the initiative reflects, in part, the current high rates of coronary heart disease (CHD) in the UK, with one person having a heart attack every two minutes (BHF, 2003). In approximately a third of these cases the person dies before reaching hospital. However, having someone at the scene of an emergency who can apply ELS promptly can potentially save lives (Nolan & Gwinnutt, 1998). Heartstart UK has been funded for ten years by the BHF and there are currently approximately 700 schemes situated in a variety of locations, which include prisons, businesses, leisure centres and schools. Richardson (2002) has pointed out that by educating the public to perform resuscitation, lives can be saved.

This research project focuses on the implementation of the initiative in the school setting. That children and young people should be the target for ELS training rests on the assumption that they are often at the scene of emergencies and, if adequately trained in ELS, can be as capable as adults in applying ELS skills (BHF, 2003). Furthermore, the school provides an environment within which the teaching of ELS can be delivered in a structured way, as part of the curriculum, and with opportunities for practical activities. Heartstart UK has developed a teaching resource to facilitate this, split into three modules, each designed to reflect the learning and physical abilities of children and young people at different ages. The resource is described as "flexible" in order to enable teachers to adapt and integrate materials into their lessons (BHF, 2003). The main aim of the teaching resource is to ensure that children and young people leave school with a sound knowledge of "when and how to act in a life-threatening emergency" (BHF, 2003, p. 8).

1.2 The National Healthy School Standard

The National Healthy School Standard (NHSS) was launched by the Government in 1999 and is now the primary vehicle through which healthy schools work is conducted (Department for Education and Skills [DfES], 2001). The scheme allows

schools to identify three priorities that they would like to work towards, within a framework of standards, in order to be accredited as a healthy school. It therefore provides a potentially useful vehicle for integrating the teaching of ELS to children and young people in schools that identify this as one of their priorities. Access to Heartstart UK resources may make this an attractive option for schools.

1.3 The aims and objectives of the research

The opportunity for a limited number of schools in Cheshire to participate in a pilot Heartstart UK project provided the circumstances for evaluating this work. The research project was designed to focus on both the implementation of the Heartstart UK initiative in a number of local schools as well as explore the extent to which training children in ELS led to the desired outcomes. Specifically, the project explored the extent to which the Heartstart UK initiative enabled the pilot schools to address the teaching of emergency life support within the context of the healthy schools programme and the NHSS. The following objectives for the research were identified:

- to describe the uptake and implementation of Heartstart UK within the context of the NHSS in the pilot schools, in order to explore the extent to which the initiative enabled each school to achieve specific priorities;
- to explore perceptions of the initiative from different stakeholders' perspectives, namely, children and young people, teachers trained in ELS and healthy schools co-ordinators;
- to assess the extent to which the objectives of the ELS training programme had been achieved at an individual and school level.

The purpose of Chapter 2 is to provide a relevant backdrop to the study. Firstly, the policy context relating to healthy schools work in general and the NHSS in particular is briefly explored. Secondly, Heartstart UK as an initiative will be examined. The Chapter will conclude with an examination of the research into the effectiveness of teaching ELS to children and young people.

Chapter 2

Background and literature review

2.1 The National Healthy School Standard

The National Healthy School Standard (NHSS) is jointly funded by the Department of Health (DoH) and the Department for Education and Skills (DfES). The aim of the Standard is to enable schools to become healthy settings, conducive to learning, and which support the educational achievement and health of children and young people. It has been described as a "guidance framework for local health and education partnerships" (Health Development Agency, 2002, p.3), which supports schools in the process of becoming healthy schools. The guidance specifies a number of Standards, each Standard in turn having a number of components. The aim of this framework is to ensure a consistent approach to healthy schools work throughout England and Wales, as well as to raise the quality of work carried out within schools.

Each local health and education partnership is required to develop a local healthy schools programme based on the national framework. Thus, although local partnerships will vary in precisely how schools are engaged and supported, the Standard ensures that local programmes will be broadly focused on the same approach. Of fundamental importance to healthy schools work is that it is based on a whole school approach to working on specific themes. This means that work should be emphasised across every curriculum area and supported throughout every area of school life. The specific themes are:

- personal, social and health education (PSHE);
- citizenship;
- drug education (including alcohol and tobacco);
- emotional health and well-being (including bullying);
- healthy eating;
- physical activity;
- safety;
- sex and relationship education.

Schools can access support from their healthy schools programme, which is managed by a local partnership between the Local Education Authority (LEA) and the local Primary Care Trust(s) (PCTs). Schools will be supported by a local healthy schools co-ordinator who will help individual schools design their own healthy school

programme, keeping local and national priorities in mind, and giving training and support where required.

At the time the research was carried out, schools were required to identify three priorities that related to the above themes[1]. For example, schools might identify safety as a theme, and, within that, identify the teaching of ELS as the focus. Cross-curricular exploration of safety in general, as well as ELS in particular, is possible through the subjects of citizenship and PSHE, as well as some aspects of the science core subject, for example, the healthy functioning of the heart and keeping healthy. Local access to resources that have been designed to be integrated into the curriculum, such as those provided by Heartstart UK, particularly where there is no cost to the school, may make this an attractive option. Furthermore, in the case of Heartstart UK, partnership working – a fundamental dimension of healthy schools work – would be achieved through affiliation into the Heartstart UK scheme and integration into the BHF support network. This suggests that the NHSS provides a potentially valuable framework for integrating the teaching of ELS into the school setting. However, there is some evidence to suggest that schools are less likely to choose safety as one of their themes and priorities (Royal Society for the Prevention of Accidents [ROSPA], 2001; Wired for Health, 2004).

Recent research into the impact of the NHSS has suggested that the NHSS provides a valuable infrastructure for integrating a variety of related activities. Furthermore, teachers, governors and parents perceived the NHSS to be sufficiently flexible to enable the integration of a diverse range of activities into a coherent programme of healthy schools work (Blenkinsop et al., 2004).

2.2 Heartstart UK as an initiative

The Heartstart UK programme for schools is implemented through an affiliation process. Schools that affiliate to the scheme receive support in terms of:

- the delivery of equipment, for example, manikins;
- training for teachers in ELS skills;
- the provision of public liability insurance;

[1] Since the research was carried out the Government has introduced a number of changes to the Healthy Schools initiative. In order to achieve National Healthy School Status schools must demonstrate that they have met the criteria in the following areas: Personal, Social and Health Education (including sex and relationship education and drug education), healthy eating, physical exercise, emotional health and well being.

- ongoing training, information and advice;
- teaching resources.

The framework for the teaching of the Heartstart UK programme is based on a training pack produced by the BHF, which contains the following information and resources: instructor's guide; skills cards; activity cards; 'no fear' video; ELS handbook; posters; certificates; workbook cover; pupil assessment form; CD-Rom. The emphasis of the programme is on the learning of practical skills and the programme design provides maximum time for practice and 'hands on' learning using resuscitation training manikins. Furthermore, repetition and revision are considered to be essential to the successful learning and retention of these practical skills (BHF, 2003).

The complete Heartstart UK programme for pupils is described as being flexible in that it can be taught as a free-standing course, or adapted and integrated into specific curriculum areas as required. At the time of the research, the guidance stated that the programme can be taught in four hours, although a number of ideas for extending the work are provided in the resource materials. To some extent, the time taken to deliver the programme is dependent on the child-teacher ratio (the optimum is stated as six pupils to one teacher, with no more than 15 children to one teacher for practical sessions) and pupil to manikin ratio (one manikin to every two pupils recommended).

Pupils' capacity to learn ELS skills is dependent on their learning and physical abilities and the Heartstart UK programme has been designed to reflect this in the form of a sequence of seven age-related staged sessions, each taking a minimum of 40 minutes, organised into three modules. The summary of the complete programme is shown in Figure 2.2.1 and the framework of staged sessions shown in Figure 2.2.2. Each session is organised in terms of key learning points, teaching notes, activity cards, extension activities and skills checklist.

As indicated above, the Heartstart UK programme is a vehicle for partnership working, including the process of involving outside agencies in the school environment, and therefore can enable schools to fulfil the Standard requirement for partnership working.

Table 2.2.1 Summary of the complete Heartstart UK School Programme

UNIT	TIME (minimum)	CONTENT
Unit 1 Introduction	15 minutes (10)	• Aims of the course • The chain of survival
Unit 2 The conscious casualty	25 minutes (15)	• Checking for danger • Checking for response • Making a 999/112 call
Unit 3 The unconscious casualty	20 minutes (10)	• Shouting for help • Opening the airway • Checking for breathing
Unit 4 The recovery position	20 minutes (15)	• The recovery position • Getting help
Unit 5 The non-breathing casualty	40 minutes (15)	• Rescue breathing • Checking for signs of a circulation
Unit 6 Cardiac arrest	40 minutes (20)	• Chest compression • Cardio-pulmonary resuscitation (CPR)
Unit 7 Suspected heart attack	15 minutes (10)	• Heart attack warning signs • Dealing with a suspected heart attack
Unit 8 Choking	25 minutes (15)	• Recognition of choking • Back blows • Abdominal thrusts • Dealing with babies and children
Unit 9 Serious bleeding	15 minutes (10)	• Dealing with serious bleeding • Pressure and elevation
Unit 10 Revision	25 minutes	• Scenarios

Figure 2.2.1 The staged sessions

Level 1	**Ages 5-8 Key Stage 2**	
Session 1	Target age 5-6	The conscious casualty
Session 2	Target age 7-8	The unconscious casualty
Level 2	**Ages 8-11 Key Stage 2**	
Session 3	Target age 8-9	The non-breathing casualty
Session 4	Target age 10-11	Choking
Session 5	Target age 10-11	Serious bleeding
Level 3	**Ages 11-14 Key Stage 3**	
Session 6	Target age 11-14	Suspected heart attack
Session 7	Target age 11-14	Cardiac arrest

2.3 Teaching and learning ELS skills

In 1992 the European Resuscitation Council (ERC) stated that schools should include the teaching of ELS in their curricula (Basic Life Support Working Party of the European Resuscitation Council, cited in Lester, Donnelly, Weston & Morgan, 1996). However, evidence suggests that the United Kingdom has been, until relatively recently, less enthusiastic about teaching ELS than some other countries such as Norway (Lester, Donnelly, Weston & Morgan, 1996). In 1998, the ERC guidelines were updated in order to simplify them to "make them easier to teach, learn and remember" (Nolan & Gwinnutt, 1998, p. 1845).

Research into the teaching of ELS and cardio-pulmonary resuscitation (CPR) with children and young people was first reported in 1961 by Lind (cited in Eisenburger & Safar, 1999). A number of subsequent studies have looked at the effectiveness of teaching ELS to school children, as well as the effectiveness of different teaching techniques (Eisenburger & Safar, 1999). A key finding of many of these studies is the importance of repetition and 'hands on' practice in the learning, recall and ability to perform CPR correctly.

Evidence of the outcomes of teaching CPR in schools was reported by Lester, Weston, Morgan, Donnelly and Assar (1994) in a study of the Heartstart UK programme, conducted with 11-12 year olds in secondary schools in Wales. The

findings from this study also suggested that the repetition of CPR skills through practical activities was essential for this form of learning. Furthermore, the learning of CPR had a positive impact on participants' confidence levels. The study also indicated that the use of adult-size manikins by this age group did not affect their ability to perform CPR, nor were there differences by age or sex.

A later study by Lester et al. (1996) with 41, 11-12 year old children, conducted after CPR tuition, compared theoretical knowledge of CPR with participants' ability to perform CPR. The study suggested that although the theoretical knowledge of the participants was high, this did not correlate with the participants' ability to perform CPR skills when observed using resuscitation manikins.

Lester et al. (1994) suggest that CPR and ELS skills are important skills for young people and children to learn in school. Currently, a large amount of information on first aid and CPR schemes is available, particularly through websites that could be used to support such work. However, the effect of this stand alone information for the purposes of learning, without trained supervision, has been found to be less effective. Eisenberg, Damon and Mandel (1995) conducted an investigation into the teaching of CPR using a videotape alone. They compared a group of people who had watched the video with a group of people who had not, and found that the difference between the observed CPR skills of the groups was minimal. This suggests that training in CPR via videotape is limited in its effectiveness and suggests an important role for a trained 'teacher'.

There has been some evaluation of the Heartstart UK scheme in Scotland (MacGregor, 2001). Findings from this large study indicate that the scheme was very well received by trained teachers and young people. In line with previous work, the study found that pupils' confidence to perform ELS was largely related to how recently they had been taught ELS and how frequently they had been able to practice ELS. However, schools reported that they found it difficult to integrate the initiative into an already crowded curriculum, as well as train an adequate number of staff to the required level. Most schools reported integrating the initiative into the personal and social education curriculum.

2.4 Conclusion

There appears to be an emerging consensus that effective training in ELS and CPR requires a programme of instruction which involves a large degree of practical repetition of key skills, supported by an appropriately trained teacher. Opportunities for revision, including repetition of skills, are also important. In addition, opportunities to develop skills through practical training are likely to increase children's confidence and motivation to perform ELS, making it more likely that a child or young person will act promptly in an emergency situation.

The argument for extending the teaching of ELS to children and young people has also been made strongly by the BHF (2003) and the school setting provides access to pupils who may be receptive to learning such skills. Schools are more likely to embrace fully the teaching of ELS if a structured programme of work, supported by quality resources and training of teachers is available. The NHSS has the potential to provide a valuable framework for integrating the Heartstart UK programme into a school setting, thus enabling the school to address priorities around, for example, safety, the body, and citizenship. (Whilst 'safety' is no longer a priority for Healthy School Status, the topic links to the *Every Child Matters* (DfES, 2004) outcomes framework in terms of 'staying safe'.) If this is the case, it might allow schools to overcome the difficulties identified by MacGregor (2001) concerned with competing pressures on the curriculum.

Chapter 3
Study design

3.1 Study design

This was a relatively small-scale study, the aim of which was to explore local implementation and associated outcomes of the Heartstart UK initiative in a specific locality and within specific schools. A case study approach was adopted in respect of each of the schools studied.

Case studies can be valuable in situations where it is important to capture all the salient aspects of an intervention (Keen & Packwood, 1995). Case studies also employ triangulation, where data, both quantitative and qualitative, are corroborated from at least one other source (Keen & Packwood, 1995). In addition, they allow for a measure of pluralism, that is, a commitment to incorporating the perspectives of different key stakeholder groups in the study (Smith & Cantley, 1985). Arguably, the strength of a case study approach to the study of implementation and outcomes is that it seeks to describe in some detail the inputs, processes and outcomes of that which is evaluated (Øvretveit, 1998). One advantage of this is that it can lead to a greater understanding of how processes associated with the intervention might lead to particular outcomes (Judge & Bauld, 2001). Although case studies have been criticised for the limited extent to which findings can be generalised to other situations, Denscombe (1998) argues that this can be overcome by, amongst other things, making it clear that generalisability is dependent on the extent to which there is similarity between the case studied and others of its type. A further value of the case study is that it allows the impacts of interventions to be explored in relation to both the intended and unintended consequences. For these reasons a case study approach was chosen.

3.2 The local context: the Heartstart UK initiative in Cheshire

The Heartstart UK programme was introduced into the Borough of Ellesmere Port and Neston (Cheshire) in 2000, by the Health Strategy Manager of the local Health Improvement Team in consultation with the BHF. The purpose of introducing the Heartstart UK programme was to:

- have access to a community-based programme that developed general awareness of ELS;

- provide a programme for Primary Care Trust (PCT) staff to develop skills in ELS;
- provide a school-based programme of ELS training for children and young people.

For the school-based strand an early decision was made to use the local healthy schools programme as a vehicle for delivering Heartstart UK, with the health improvement co-ordinator for children and young people as the link between schools and the BHF.

Eight primary and two secondary schools in the Borough agreed to participate in the pilot initiative. All of the schools had signed up to the Cheshire healthy schools programme. Each school had identified training in ELS as one of their three priorities for their healthy schools work. This situation presented a research opportunity in which local implementation could be studied, using each pilot school as a case study.

The Heartstart UK programme was introduced into the schools in 2001 after the initial training of teachers in ELS had taken place. Two designated teachers from each participating school completed the training at the Countess of Chester Hospital (CoCH). In total, 21 teachers received training in ELS skills in 2001, two teachers from nine schools and three teachers from one school.

3.3 Recruiting the sample

All ten schools were invited to participate in the research through a letter to the head teacher of each school from the health improvement co-ordinator. This was shortly followed by a letter from the lead researcher to the head teacher requesting a preparatory meeting to discuss the school's involvement in the study and providing detailed information about the study (Appendix 1). Telephone contact was made in July 2003 with the head teacher or PSHE co-ordinator in each school to establish interest and arrange a meeting. These meetings took place between July and September 2003. Of the 10 schools contacted, six primary schools and one secondary school agreed to a meeting to discuss their participation in the study. Two schools declined to be involved in the study and one school did not respond.

As a result of the contact meetings, five of the seven schools (four primary and one secondary school) agreed to full participation in the case study. One school was unable to participate at that time, as both Heartstart UK trained teachers had left the

school and training for a further two teachers had not yet commenced. Furthermore, the children who had participated in the scheme had since moved to secondary school. A further primary school was unable to participate fully as all Heartstart UK trained children had moved to secondary school. However, the head teacher agreed for the Heartstart UK trained teacher to be interviewed.

Confirmation letters were sent out to schools detailing the schedule on the day in terms of questionnaire distribution, focus groups with children, interviews with teachers and observations of children performing ELS, as agreed in consultation with the head teachers or PSHE co-ordinator, of each participating school. Negotiations for access to schools were made in June and July with empirical work being conducted in September through to the end of November 2003. Schools varied in how recently they had delivered the Heartstart UK programme. In some cases it was delivered up to 18 months earlier, whilst in other cases, it was delivered relatively recently, for example within the last two weeks.

3.4 Data collection methods

Four methods of data collection were used:

- semi-structured interviews with trained Heartstart UK teachers;
- focus groups with children and young people who had participated in the ELS training;
- a short questionnaire composed of closed questions, designed to demonstrate knowledge about ELS;
- observations of the children and young people performing ELS skills.

3.4.1 Semi-structured interviews with Heartstart UK trained teachers

Semi-structured interviews, consisting of open-ended questions, were used. Thus, the interview schedule defined the areas to be explored with participants whilst still allowing the interviewer or interviewee to diverge in order to follow up particular areas in more detail (Britten, 1995). This format allows interviewees the opportunity to express ideas that are important to them (Bowling, 2002). The interview was used to gather factual information about implementation as well as explore participants' views of the Heartstart UK initiative, including the training, and the impact of the initiative on children and young people. A copy of the interview schedule can be found in Appendix 2.

All teachers had been trained by the Resuscitation Council (UK) in ELS skills and also received guidelines for teaching ELS as recommended in the BHF Heartstart UK Training Pack. A total of nine interviews were carried out, all with Heartstart UK trained teachers. The teachers interviewed in the primary schools comprised: two head teachers; one deputy head teacher; three Year 5 teachers; one PSHE co-ordinator. Within the secondary school the Personal, Social, Health and Citizenship Education co-ordinator (PSHCE) and a Year 8 teacher were interviewed. With the permission of the interviewees, all interviews were tape recorded.

3.4.2 Focus groups with Heartstart UK trained children

The focus groups were used as a way of exploring the views of children and young people in each school about their participation in the Heartstart UK programme in terms of their learning and perceptions of the training. One focus group per school was conducted, with four of the focus groups having eight participants and one group with four participants. The groups were put together by the class teacher, largely on the basis of friendship groups, as proposed by Scott (2000). The focus groups were designed to take approximately 45 minutes. The questions that were asked in the focus groups were based on a number of key themes which were used as a guide to stimulate discussion. The focus group guide can be found at Appendix 3. Each focus group began with a brief explanation of why the children or young people were here; some ground rules for the group were also established. These were a broad set of rules about how the focus group would run and were designed to put children at their ease and help the flow of discussion (Krueger, 1998).

3.4.3 Questionnaire survey with Heartstart UK trained children

A short questionnaire was developed, based on the learning covered in each of the modules in the Heartstart UK learning resource pack, which was designed to test knowledge of ELS. The questionnaire was aimed at five to 14 year olds. The language used in the questionnaire was simple and based on the vocabulary that had been used in the teaching of ELS in order to avoid unfamiliar terms that might confuse pupils. The questions asked related to the main topics covered by the training material such as: safety; recognising an emergency; checking for signs of life; resuscitation; breathing; choking; bleeding; and, signs of a heart attack. The children and young people were asked to complete only those sections of the questionnaire that directly related to the modules they had completed. A copy of the questionnaire can be found at Appendix 4.

The questionnaires were either sent to schools for completion prior to the researcher's visit or completed on the day the researcher was in the schools for other fieldwork, in line with each school's preference. With some of the younger children, the questions were read out in class to help the process of answering, as suggested by Christensen and James (2000). The actual mode of delivery was left to the discretion of each teacher.

3.4.4 Observation of ELS skills with Heartstart UK trained children

Observations were used to assess the learning that had taken place by the demonstration of the ability to perform particular ELS skills. Many of the primary schools used Modules 1 and 2 of the teaching pack but did not cover the skills relating to Module 3, such as choking and serious bleeds. Thus, the observations reflect only the section of the Heartstart UK programme that was taught to each individual group. An observation sheet was developed and used to record whether or not each child had performed the skill correctly (see Appendix 5). The skills assessed during the observation period were:

- turning the casualty into the recovery position;
- assessing signs of breathing;
- performing rescue breathing;
- resuscitation.

The observation period began after an explanation of the task was given to the participants. The researcher observed:

- whether or not the participants understood what was being asked of them;
- evidence of enthusiasm and interest in what they were being asked to do;
- how well they coped with the task they were being asked to undertake;
- whether the participants co-operated with the researcher conducting the observation;
- whether or not they appeared to be relaxed in what they were doing.

There were 28 primary school and eight secondary school pupils, a total of 36 children and young people, observed performing ELS, in groups of two, with one set of resuscitation equipment, each child taking it in turn to carry out the request to perform a specific skill. The class teacher was also present during the session. This arrangement was made for practical reasons. Two researchers carried out the observations using a standardised observation schedule.

3.5 Research ethics

Ethical approval was gained from the Centre for Public Health Research Departmental Research Ethics Committee on 24th June 2003. All participants were provided with written information about the research and asked to give their informed consent to participate in the study by signing a consent form (see Appendix 6). In the case of children and young people, the head teacher took responsibility for sending the information home to parents and requesting consent for their child to participate in the research. All children who had received Heartstart UK training were invited to participate in the research. However, only those children for whom a consent form was returned participated in the activities (focus group, observation and questionnaire) which reduced the numbers from whom data could be collected.

3.6 Analysis of qualitative and quantitative data

Interview and focus group data consisted of the tape-recorded material and field notes. This material was subject to a thematic analysis and coded by theme. The questionnaires were loaded onto SPSS, cleaned and analysed. The observations were analysed by identifying the percentage of children who correctly performed ELS skills.

Chapter 4

Understanding implementation in the pilot schools

4.1 Introduction

This Chapter contains the findings from the interviews with the trained Heartstart UK teachers in the pilot schools. The narratives generated by the interviews were explored in order to gain an understanding of how the Heartstart UK programme had been integrated into each school, particularly in respect of enabling factors. The perceptions of those involved in the delivery of the programme were also explored, both in terms of their capability and confidence to teach ELS and the effect the programme had on the children who were taught ELS. Quotations from the interviews are used to illustrate the points made. All quotations have been anonymised and are coded by participant number.

4.2 The decision to participate in the Heartstart UK programme

Teachers identified a number of different reasons for deciding to participate in the Heartstart UK programme. Many teachers talked about the value of learning ELS for pupils. For example, one interviewee said:

> *'Heartstart seemed like a very valuable programme and it seemed to fit well with the healthy schools approach.'* (002).

This quotation also indicates that it was beneficial, to this teacher, that the programme could complement their healthy schools work.

Another factor in choosing the Heartstart UK programme related to the resources available to support schools with ELS training. Interviewees identified access to training and teaching materials and the use of resuscitation equipment, as well as the additional support from the health improvement co-ordinator in applying for affiliation to Heartstart UK. A further issue in the decision to adopt the Heartstart UK programme was said to be the prevalence of heart disease in the locality. In one of the primary schools this was a particular concern that was raised by the interviewee who stated that:

> *'There is a high risk of heart illness in the area and children should be involved and should take these issues on board.'* (003).

This is an example of the way in which the programme enabled schools to respond to local issues and concerns as part of their healthy schools work.

4.3 Implementing the Heartstart UK programme in the school setting

Interviewees described the ways in which they had integrated the teaching of ELS into the curriculum. Table 4.3.1 summarises this information. In line with Heartstart UK guidance, the programme was taught during a four-week block in all but one of the case study schools.

In the secondary school, where block teaching of specific initiatives was reported as being more difficult, Heartstart UK modules 1-3 were taught initially with Year 9 pupils (13-14 year olds), but later changed to Year 10 pupils, in order to offer the programme to a smaller group: 17-19 in a group rather than up to 30 pupils. At the time of the study, the Heartstart UK programme was taught as a rolling programme throughout the school year, each group being taught one, one-hour lesson a week, for four weeks, as part of the PSHCE curriculum. In the primary schools studied, where the Heartstart UK programme tended to be taught to Year 5 pupils, in three cases it was delivered in the autumn term. In one case this was a planned activity that fitted in with the science curriculum and linked with other activities in the school year. In the other two cases the decision to place the Heartstart UK programme in the autumn term was based on the availability of the resuscitation equipment and the willingness of the school to plan other activities around the Heartstart UK programme.

In one of the primary schools, the Heartstart UK modules 1 and 2 were taught with Year 6 in the summer term after the completion of National Curriculum Tests. It was considered by the class teacher who delivered the programme, that Heartstart UK would be an effective way to continue work on the functions of the body and link with the Improving Safety (IMPS) initiative that was taught earlier in the school year. One school, which completed Heartstart UK in Year 5, had done so in order to link with the IMPS initiative and the science work on the body taught in Year 6. The teacher commented that:

> *'The Heartstart UK programme fitted well with science in Year 5. There was too much extra work for Year 6 … it would not be practical.'* (002).

Table 4.3.1 Heartstart UK implementation in the school setting

School	NHSS Priorities	Curriculum	Teachers trained	Delivery
1 Primary	• Heartstart UK within PSHE. • Healthy Eating. • Safety.	• PSHE 'Health for life' scheme. • Science Key Stage 2 'Life Processes'. • RE 'Looking After Ourselves' and 'Growing and Choices'.	• Head teacher. • Deputy head teacher.	• Modules 1 and 2 taught with Year 5 and 6 in a mixed class over a five-week period. • 1-2 40-minute sessions a week. • Instructor to child ratio 2:16.
2 Primary	• Heartstart UK within PSHE. • Sex and relationship education. • Safety.	• PSHE. • Science 'Keeping Healthy'.	• Two Year 5 teachers.	• Modules 1 and 2 taught with Year 5 over a four-week period. • Three 1-hour sessions per week. • Instructor to child ratio 2:30.
3 Primary	• Heartstart UK within PSHE. • Safety. • Citizenship.	• PSHE • Science 'Keeping Healthy'.	• Year 5 teacher. • Head teacher.	• Modules 1 and 2 taught with Year 5 over a four-week period. • Instructor to child ratio 1:2-6.
4 Primary	• Heartstart UK within PSHE. • Healthy Eating. • Citizenship.	• Science Key Stage 2 'Life Processes' and 'Keeping Healthy'.	• Head teacher. • Year 5 teacher.	• Modules 1 and 2 taught with Year 5 and 6 as part of a Healthy School week and throughout the school year. • Minimum of six 1-1 ½ hour sessions. • Instructor to child ratio 1:15.
5 Primary	• Heartstart UK within PSHE.	• Science 'Life Processes'.	• Three Year 6 teachers.	• Modules 1 and 2 taught with Year 6 in a four-week period. • Minimum of one 1-hour session a week, two weeks of theory and two weeks of practical. • Instructor to child ratio 1:30.
6 Secondary	• Heartstart UK within PSHCE. • Sex and relationship education. • Citizenship.	• Personal, Social, Health and Citizenship Education.	• PSHCE co-ordinator. • PSHCE teacher.	• Modules 1, 2 and 3 taught with Year 10 in a four-week period, one 1-hour session a week. • Instructor to pupil ratio 1:17-19.

Teachers commented that one of the factors influencing where and how Heartstart UK was integrated into the school year and timetable was the availability of resources, including trained staff. This was reported as having an impact on the number of children who were taught ELS. In one primary school where there was only one trained Heartstart UK teacher (the other two trained staff having left), the programme was taught only with the remaining trained teacher's class of 30 children, rather than the proposed 100 children, when all three trained Heartstart UK teachers were present. In another primary school where there was one trained Heartstart UK teacher, the programme was taught as part of a healthy school week with all of the Year 5 group, with additional practical ELS sessions as revision throughout the school year. This diversity of integration and implementation is an indication of the way in which the programme is sufficiently flexible to accommodate a variety of potential constraints: timetabling; other school activities that require integration; access to resources; and, availability of trained staff.

A critical enabling factor is, of course, the resource of the trained teacher. As indicated above, if a trained teacher leaves a school this impacts on the number of children who can participate. Access to teaching support while the trained teacher was delivering the Heartstart UK programme was also a matter that was raised by the interviewees. For example, in one primary school the head teacher took a Year 5 class while the two Heartstart UK trained teachers took the other Year 5 class for ELS work. This enabled the teacher to pupil ratio to be maintained at approximately 1:14. In another primary school, the support of a teaching assistant trained in first aid worked with the Heartstart UK trained teacher in class to maintain the desired ratio. Where such support was not available, this limited the extent to which optimum ratios could be maintained, as well as reduced the number of children that could be trained.

4.4 Integration into the curriculum

The secondary school integrated the Heartstart UK programme into the PSHCE curriculum. Heartstart UK was used as the health component of Key Stage 4, and was delivered as part of a modular programme as discussed above.

Within the primary schools studied the Heartstart UK programme was integrated into the science Key Stage 2 unit 'Keeping Healthy' with Year 5 pupils. The aim was to complete the programme within the four week timescale, which necessitated that other subjects were *'put aside'* in order to complete the programme before the resuscitation equipment was returned. The interviewees envisaged that, clustering

the equipment into school groups rather than each school accessing the equipment directly via the Health Improvement Team, would mean greater flexibility in the teaching of the programme in terms of time for, and revision of, the programme. For example one interviewee said:

> *'We taught Heartstart UK in a four week block in the autumn term, two weeks per class. We placed emphasis on Heartstart, and other sessions such as PE, and other subjects are put aside in order to make the best use of the resuscitation equipment.'* (005).

In the primary school where Heartstart UK was taught in Year 6 in the summer term it was linked with science work on the systems of the body and with work covered earlier in the school year, such as the IMPS initiative. Heartstart UK was delivered as a separate topic in a four week block, two weeks for theory and two weeks for practical.

In one primary school, Heartstart UK was introduced as part of the healthy school week in June each year and was taught with the whole Year 5 group of about 30 children. The Heartstart UK programme linked with the Life Processes unit in the science curriculum, which was taught in single year groups, on a rolling programme throughout the school year.

Generally in primary schools, the Heartstart UK programme modules 1 and 2 are delivered through PSHE as part of one of the healthy school priorities and through the science Key Stage 2 unit 5a Keeping Healthy.

4.5 Training in ELS

All the schools in the study initially had at least two teachers trained in Heartstart UK. One primary school, because of the large numbers of pupils in the school, had three teachers trained. However, because of staff changes in some schools, this number decreased to one trained teacher per school. The primary school teachers trained were usually those who would teach the programme to their own year group. In one primary school the non-teaching head and the deputy head teacher were trained, as the head teacher was the healthy school co-ordinator and the deputy head a Year 5 teacher. In two further primary schools the head teacher was trained and in both cases the Year 5 teacher was the other Heartstart UK trained teacher. In one primary school both trained teachers were Year 5 teachers.

In the secondary school there were two Heartstart UK trained teachers in the school with a further teacher due to be trained in the next round of ELS training. The trained teachers taught PSHCE subjects, one being the PSHCE co-ordinator.

Among the group of trained teachers there were differences in their views on the training, both in terms of content and delivery. While it was agreed that the content of the training programme was comprehensive, there was concern that within a four hour timeframe there was too much information to assimilate. For example, one interviewee said:

> *'We both had some first aid background; without that it might have been too much in one go. It was thorough … although there was a lot crammed in.'* (002).

Having a first aid background was seen by the trained teachers as beneficial, both in terms of being able to make sense of the training and being able to respond better to children's questions. For example, one interviewee said:

> *'The training course was good; however, having a first aid background was advantageous as children ask questions around related issues ….. you can answer them and look more authoritative.'* (001).

This suggests that some teachers may lack confidence to deliver the programme, at least initially, particularly if they do not have a background in first aid. Those teachers who had prior knowledge and skills in first aid found the training to be adequate and thorough. However, those who had little or no first aid knowledge suggested that further training would be useful. For example, one interviewee said:

> *'One member of staff was hesitant about teaching ELS with children and I feel that some more sessions initially might have made staff more confident to present Heartstart.'* (005).

It was perceived by all but one of the teachers interviewed that further or more frequent training in ELS would be a benefit both in terms of their confidence to deliver Heartstart UK and, subsequently, by being able to offer a more detailed and *'authoritative'* programme.

4.6 Access to resources

The Heartstart UK teaching pack is an integral part of the programme which details the content and delivery of the programme to provide support to teachers. (It should be noted that all schools now receive a new training pack on affiliation to Heartstart UK. There were concerns expressed by some of those interviewed that they did not

receive this material or that it was incomplete. For example, within the secondary school studied, the teaching pack was not delivered with the resuscitation equipment and the school received photocopied sheets. As no video was included the school used its own video, which was similar and showed the CPR process. The resuscitation equipment was accessed via the Health Improvement Team at the Countess of Chester Hospital. (The school now holds 15 sets of equipment, which are also available to the cluster schools when needed.)

The clustering of equipment – where resuscitation equipment is stored by one school for the use of three or four other local schools involved in the Heartstart UK programme – was perceived to be a better idea than previous arrangements which used the booking system to request resuscitation equipment. There was a general consensus that being part of a cluster group for resuscitation equipment would give schools more opportunity to access the manikins for a longer period of time and would enable the schools to integrate the Heartstart UK programme more effectively, since this would mean less disruption to the planned curriculum. As one teacher stated:

> *'We would like to have the manikins longer as we put aside other subjects to fit everything in … we can have regular revision sessions throughout the year.'* (004).

Whilst it was agreed that the regular revision and repetition of performing the skills of ELS were important in enabling the pupils to remember, there was a mixed reaction to storing the resuscitation equipment in school. Two of the primary schools suggested that there was adequate access to equipment via the Health Improvement Team and, more recently, through the cluster system. One head teacher suggested that:

> *'There are cost implications for schools with regards to equipment, the storage of equipment, bulky items to store ….. the maintenance … which the school has to take into account … the cost if they break stuff … and breakages in the longer term.'* (001).

The general perception was that access to the resuscitation equipment throughout the year was an important factor for planning of delivery with minimal disruption to the curriculum, as well as to enable revision of ELS throughout the school year. This could be either through the cluster system, or by having two sets of equipment based in each school.

4.7 Quality of resources

Within the primary schools there was a mixed response to the teaching pack. In one primary school the teaching pack arrived with the resuscitation equipment the day before the programme was scheduled to be taught. One interviewee explained:

> *'So we were teaching a programme at the same time as designing it from the pack.'* (004)

In another school, the training pack was used as background material for the teachers, who devised their own scenarios rather than using the ones supplied, as it was felt that they did not reflect the real situations of the children in the school. Therefore, teachers were adapting the materials to the local situation. Within the same school the diagrams and the posters were considered *'good'* for class-based learning. However, in another primary school where the programme was taught by closely following the training pack, it was felt that some sections were more useful than others. For example, the scenarios were considered to be difficult for the children to understand, as the teacher explained:

> *'A lot of the suggested scenarios the children found quite difficult to understand, what they were looking for, what they were to do, even when the stories were read to them. Just having one picture was a problem; some of the less able children found it difficult to imagine what happened.'* (005).

It was also reported that some of the resources, such as the posters and charts were small and it would have been useful to have posters to describe the processes of CPR. (These have now been included in the new teaching pack available from November 2003.)

Three of the primary schools followed the teaching programme with little modification, completing modules 1 and 2 and talking through the principles of module 3 without using the choking equipment. One of the interviewees said that *'the teaching pack was easy to adapt to the abilities of the children'.* (003). Generally, teachers commented on the teaching materials in terms of using them as a basis for delivery but adapting them for their own purposes, depending on the age and ability of children. It was evident from teachers' narratives that it was possible to integrate material in this way.

4.8 Teachers' views on children's responses to learning ELS skills

It was generally agreed by all the interviewees that all the children involved had gained a great deal from the programme. Specifically, they were perceived to have

enjoyed the practical aspect of the programme and it was reported that some of the less able children in particular had benefited. One teacher stated:

> *'Two children in my class who have special needs, one is hearing impaired and one with autistic tendencies, both responded positively to the experience. They were both very focused during the sessions, whereas in the past their minds had tended to wander off. They were enthusiastic, they remembered the order and supported others ….. It's a programme for all.'* (005).

Another teacher expressed similar thoughts in relation to the benefits to the children who were taught ELS, and stated:

> *'Children who don't easily learn in a formal situation found it easier, because they are physically engaged, and part of the class.'* (004).

There was a general perception that the children involved in the Heartstart UK programme had concentrated hard and took the programme, as well as their responsibilities, very seriously. One Year 5 teacher observed:

> *'The children loved the responsibility, they thought that they could be trusted to do something like that … knowing what to do, and putting their knowledge of science into practice.'* (002).

This teacher's comment also suggests that the teaching and learning of ELS within the school setting provides opportunities to make connections between other aspects of children's learning – such as science in this case.

One head teacher, who was involved in delivering the programme to Year 5 and Year 6 children, commented, with some surprise, that children had been able to remember much of what they had learnt about ELS:

> *'The children were enthusiastic, excited and responsive and seemed to remember well. I was surprised by the children's response. A few months after completing Heartstart the school had an Ofsted inspection. We borrowed a doll for the children to demonstrate and the children coped really well, I was really impressed by their response, I was really moved and it was mentioned in our Ofsted report.'* (001).

Within the secondary school studied the young people's responses to the programme were again perceived as positive, particularly in terms of the practical aspect of the Heartstart UK programme. However, the teacher reported that some pupils expressed concern that they were repeating things they had previously learnt and that this was unnecessary. One teacher expressed these concerns by stating:

> *'My concern is that Year 10 is too late, as they come through to us, will there be a need in the secondary school if more schools do it? My argument would be that they are re-visiting it anyway; they are older*

and should be able to remember it. I'm a Year 8 teacher and when the manikins arrived in the school they all knew what they were, they used them in primary school. I don't want the pupils to come to the sessions and say "well we've done this before, we don't need to do it again", and I think that's my only concern because I do value the programme and feel it is worthwhile.' (006).

4.9 Conclusion

All of the interviewees perceived the Heartstart UK programme to be worthwhile and well-conceived and would be continuing with the programme in the future, either delivering the programme in the current format or developing the programme to meet the individual needs of their school and pupils. Teachers commented favourably on the resources and described a variety of different ways in which the programme had been integrated into their work. The flexibility of the teaching materials, the quality of the resources and access to training were identified as important by interviewees.

Chapter 5

Children's perspectives on the Heartstart UK initiative

5.1 Introduction

This Chapter describes the views expressed by the children and young people in the focus groups about the Heartstart UK programme. The purpose of the focus groups was to explore the perceptions of those who were taught the Heartstart UK programme, particularly in terms of their ability to perform ELS and what they thought they had gained from participation in the programme.

The primary school focus groups were conducted with Year 6 children, who in most cases had completed Heartstart UK in the previous school year. In one case the group had completed the programme two weeks prior to the research taking place. The secondary school group were all Year 10 pupils and had also completed the programme two weeks prior to the research taking place.

5.2 Background knowledge of ELS

In order to determine the level of knowledge and understanding of ELS prior to starting the Heartstart UK programme, the participants in the focus group were asked to discuss any previous learning of ELS. Within the primary schools, three of the groups had two to three participants in each who had said that they had some experience of learning ELS. One child had training in both emergency first aid and general first aid. Within the secondary school, prior knowledge of ELS, and in some cases Heartstart UK, was gained either through primary school or a club-based environment. In this group, two pupils had prior knowledge of ELS from primary school and one pupil had some experience of first aid from a youth club he had attended.

5.3 Perceptions of Heartstart UK and ELS training

Learning about ELS was generally viewed as interesting and worthwhile. Primary school children said that the programme had been *'fun'*, particularly the practical aspect of the programme. ELS skills were also viewed as valuable skills to learn, in that they could be used to help save lives in an emergency situation. One pupil commented that:

> *'It was fun practising on the dummies and it's really good just to know how to be able to help ….. saving people's lives.'* (003).

The children and young people talked about how the Heartstart UK programme was delivered and the processes that they remembered. In two schools Heartstart UK had been taught in the previous school year, 11 months earlier. In both cases the participants were able to recall their experiences and discuss the processes of ELS. One group member said:

> *'I worried about remembering everything, but I think I can remember now. It's like riding a bicycle …. you don't forget.'* (002).

This same group had produced a play about the working of the heart and performed it in front of the school. The group all talked about their own experiences of being involved in the play and how they had enjoyed participating, in particular, the chance to show others what they had learnt.

Children from the primary schools with more recent experience of being taught ELS readily recalled what was taught and the skills they had learnt. As with the other groups, the processes remembered related primarily to the practical part of the Heartstart UK programme. The main issues discussed were resuscitation; talking about the correct ratio of breaths to chest compressions; and the difficulties of putting each other in the recovery position. For example, one participant said:

> *'The recovery position is quite hard, because I kept getting confused because of knowing where to put the hand, but when I got it, it was good.'* (005).

One of the main concerns for all the primary school children was the ability to breathe correctly into the resuscitation manikins and produce a seal around the mouth. For example, one participant reflected the views of others when s/he said:

> *'The first time I did rescue breaths I could pinch the nose and make sure the airways were clear but I couldn't get my mouth around the dummy's mouth.'* (005).

Another issue that was raised by many of the participants in the focus groups was knowing how much pressure to apply during chest compressions. Two of the groups raised concerns about the differences between manikins and a *'real person'*. One focus group member explained:

> *'When you do chest compressions there's a click on the dummy and there wouldn't be a click on a real person, you wouldn't know how deep to go because you always hear a click.'* (005).

There were some concerns expressed in the groups about performing ELS in real life situations. While children said that they received reassurances from their teachers

that it was better to do something than nothing, there were still concerns expressed about incorrectly performing procedures and possibly harming a person.

The primary school children had all completed Modules 1 and 2 of the programme and had also discussed choking and bleeding, which are included in Module 3. All but one of the groups had worked through scenarios either from the teaching pack or devised by their teachers. All the groups who had used the scenarios talked about them in the focus group and said that they were a fun way to learn, usually working in small groups, discussing the situation and then acting out how they would deal with each emergency. The focus group containing children who had not used the scenarios as part of the ELS programme described how, after some of the ELS sessions with the Heartstart UK trained teacher, they would go back to class and discuss emergencies with their class teacher. One focus group participant stated:

> *'The teacher makes it funny by telling stories about when he was learning and the mistakes and funny things that happened … it helped to hear those stories because it made it more real to know.'* (004).

In the primary schools the children talked more about the issues that they said they enjoyed and remembered. It appeared that the learning experience of the pupils was enhanced when the learning was made fun and was based around their own experiences or issues that could be easily related to their own understanding. While all the children said that they had enjoyed the programme and their teachers had taught them a lot in terms of ELS, the different emphasis on teaching particular parts of the programme was reflected in the discussion within the individual groups. This is reflected in the interviews with the Heartstart UK trained teachers in each school. Therefore, when emphasis was placed on ABC (airway, breathing, circulation) or rescue breathing and chest compressions or the performance of a school play about the heart, that was the area most discussed.

With the secondary school children, all three modules had been completed. There was little discussion about the teaching style and everyone said that they felt confident that they could accurately perform ELS. The groups had two, one-hour sessions on theory and two, one-hour sessions on practical ELS skills, which they all thought was adequate. One focus group participant stated:

> *'It was a change from normal lessons, we weren't sitting in a classroom reading from a text book, we were actually doing it and getting the experience.'* (006).

The only area that was considered to be of particular difficulty was using the 'Choking Charlie', as it was considered *'hard to press and would not be the same as a real person.'*

The general perception of the children and young people who participated in the focus groups was that they had learned a lot from the Heartstart UK programme. While there were some concerns expressed from the primary school children about practising and remembering the ELS skills they had been taught, many of the participants felt that the repetition of the practical tasks and the use of scenarios were helpful in remembering ELS.

5.4 Using ELS skills in real life situations

As indicated above, the use of ELS in real life situations was discussed in all the focus groups. There was a clear difference between the secondary school and primary school children in this respect, with the older children being more confident in their ability to perform ELS and not identifying any specific problems in dealing with a real life situation. Some members of this group said they would feel nervous about being at the scene of an emergency rather than their ability to perform ELS. For example, one group member said:

> *'I would do it but with any luck I wouldn't have to, because you don't want to be there, you don't want to think that people could get hurt, that bad could happen to them. When something like that happens you just want to get as far away as possible, but now I'm more confident.'* (006).

Primary school children on the other hand said that they were nervous and would worry about their own personal safety in respect of approaching a stranger in order to offer ELS. In one primary school every member of the group raised the issue of safety, which they said could affect the likelihood of them offering to perform ELS. However, they suggested that if they were with a friend, this would not be quite such a matter of concern. Other children expressed the view that they would be nervous about performing ELS in any real life situation.

The issue of the children's confidence in performing ELS and the reactions of others in real life situations, particularly adults' reactions, was a theme that was explored. Many members of the focus groups felt that if they were at the scene of an emergency where an adult was present, who had knowledge of ELS, they would not offer to give help. However, children also said that they felt that in an emergency

situation it was important for them to let people know that they could perform ELS and this would over-ride any concerns that they had. One person said:

> *'I would have thought that they would tell you to go away, because you are only a child … if that happened and that person dies then next time you show them that you could save someone's life. I would just go and do it and I would just ignore them.'* (005).

Furthermore, some children said that they might have skills that adults lack and that they should not be frightened to use them. They said that this made them feel responsible and motivated them to try to perform ELS to the best of their ability. For example, one primary school child said:

> *'If you ignore them they might die, because the adults don't know what to do.'* (005).

There were concerns expressed by some of the primary school children about their ability to perform ELS, in particular *'getting it wrong',* in real life situations. However, the children said that the sense of responsibility they felt in acquiring skills in ELS in terms of *'gaining a life skill'* and *'being trusted to save lives'* were factors that would help them to feel confident and feel satisfied in their abilities.

5.5 The perceived benefits of the Heartstart UK programme

The focus groups discussed the impact of the Heartstart UK programme both in terms of their personal understanding of ELS and any other perceived benefits of the programme. For the secondary school participants one perceived benefit was an increase in their ability and confidence in performing ELS. One member of the group said that:

> *'It is a skill that stays with you, for you to remember in case you need it, because it's useless if you do it and just forget about it, so they try and make the lessons interesting for you to remember.' (* 006).

The primary school children considered the programme to be worthwhile, interesting and fun. For example, one participant said:

> *'I really enjoyed doing it and I feel a lot more confident in what I'm doing and I feel I know what I'm doing.'* (005).

The sense of personal responsibility to perform and have the skills in ELS was felt by the children and young people. One participant expressed this by stating:

> *'You feel you are older, feel mature that you are given the responsibility, usually adults learn it … you're being trusted and taught to save lives.'* (002).

The children and young people also said that participating in the Heartstart UK programme had helped them to think about what to do in an emergency, in terms of helping, and what kind of help they could offer. One child said:

> *'Like ages ago we didn't know what to do in an emergency but now we've got options, which option we could do if we came across someone.'* (005).

5.6 Conclusion

Focus group participants expressed their enjoyment of the Heartstart UK programme as a learning experience, as well as in terms of gaining new, valuable skills. Children emphasised the practical aspects of the programme that gave them worthwhile skills. One child said:

> *'Now we all know about first aid and it's really good because two weeks ago I didn't have a clue what to do, say, if someone fainted, but now I know what to do.'* (005).

Children varied in the degree to which they felt sufficiently confident in their ability to perform ELS correctly in real life situations and, in part, this appeared to be linked to age, with older children expressing greater confidence than younger children. Younger children also expressed a number of other concerns about their own safety and putting themselves forward in real life emergency situations. However, overall it is evident that developing competence in ELS has important benefits for the development of confidence and self-worth of children and young people.

Chapter 6

Children's knowledge of ELS

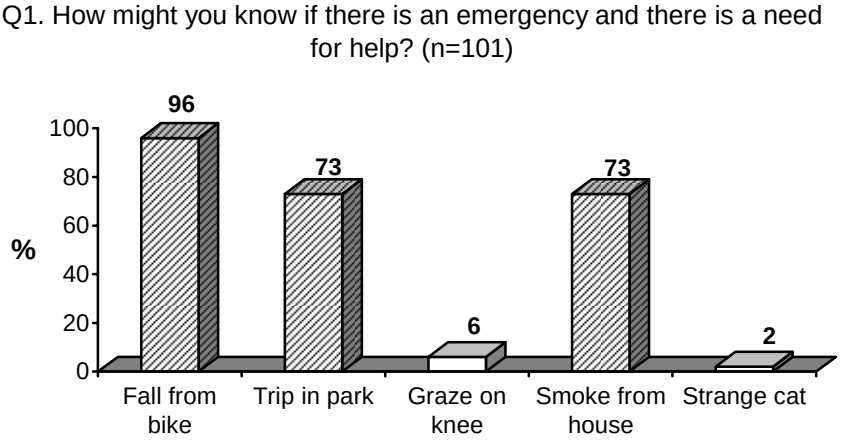
6.1 Introduction

This Chapter presents the findings from the questionnaire designed to test children's knowledge of ELS. There were 101 completed questionnaires, 86 from primary schools and 15 from the secondary school. The questionnaire was divided into three sections, each one reflecting the module of learning as detailed in the Heartstart UK teaching pack. Not all pupils answered every question. Children's responses to questions are described below. The correct answers are indicated in the bar charts by cross hatching. Percentages are used in this Chapter, which closely approximate to the numbers of children.

6.2 Knowledge of an emergency situation

The first question asked children to identify an emergency situation. There were three correct answers out of five options. All children were able to identify at least one emergency correctly. Figure 6.2.1 shows the children's responses in detail to this question. Fifty five percent of children identified all three correct answers, whilst 34% correctly identified two or more emergencies and 12% correctly identified one emergency.

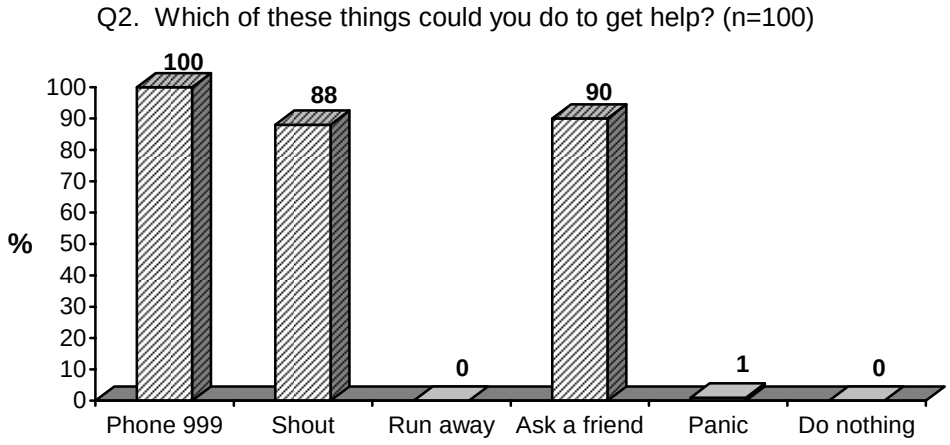
Figure 6.2.1 Knowledge of an emergency situation



6.3 Getting help

Children were asked to indicate how they would get help in an emergency. Their responses are summarised in Figure 6.3.1. Out of six possible responses there were three correct answers. In general terms, the children demonstrated a fairly high level of knowledge about how to get help in an emergency situation. All children correctly identified 'phone 999', with a further 88% and 90% respectively correctly identifying 'shout for help' and 'ask a friend for help'. Eighty three percent of children identified all three correct answers, with 10% correctly identifying two correct answers and 6% identifying only one correct answer. Only one child responded incorrectly.

Figure 6.3.1 Getting help in an emergency

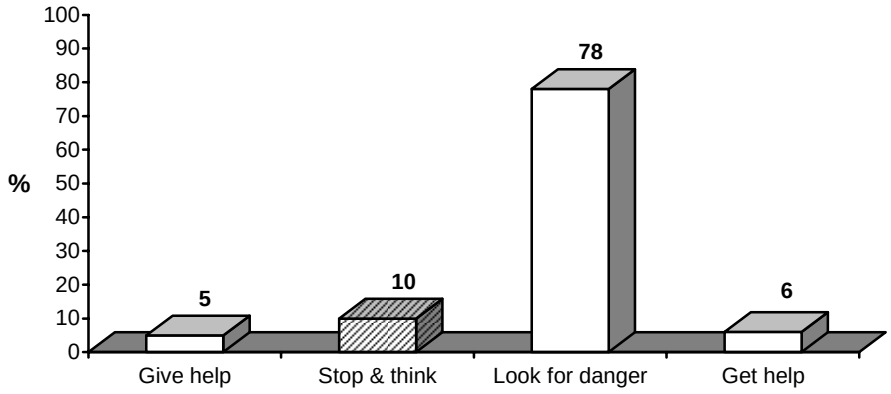


6.4 The first rule for helping in an emergency

Children were asked to identify the *first* rule for helping in an emergency. Figure 6.4.1 shows their responses to this question. Ten percent of children correctly identified 'stop and think', whilst 78% of children identified 'look for danger'. At a common sense level all four options might seem sensible to children, particularly as they are likely to have been sensitised to the need for prompt action in emergency situations. However, their responses suggest that they are unclear about what to do on *first* arriving at an emergency situation. This might suggest that children may be in danger of acting too quickly in an emergency if they have failed to grasp the importance of 'stopping and thinking'. This is a fundamental rule in ELS training that needs to be grasped if potential participants are to avoid putting themselves at risk and be in situation to offer support to others.

Figure 6.4.1 The first rule for helping in an emergency

Q3. What is the FIRST rule to helping in an emergency? (n=101)

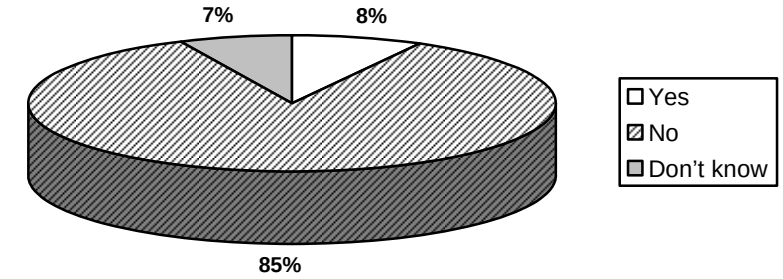


6.5 Knowledge of the unconscious state

Children's knowledge of the difference between an unconscious person and a sleeping person was explored. Figure 6.5.1 shows their responses to this question. Eighty five percent of children knew that being unconscious was not the same as being sleeping, whilst 15% either thought they were the same (8%) or did not know (7%). One child did not answer this question. This suggests that a minority of children would have difficulty in identifying an unconscious person who was in need of prompt help.

Figure 6.5.1 Knowledge of the unconscious state

Q4. When someone is UNCONSIOUS is it the same as when they are SLEEPING? (n=100)

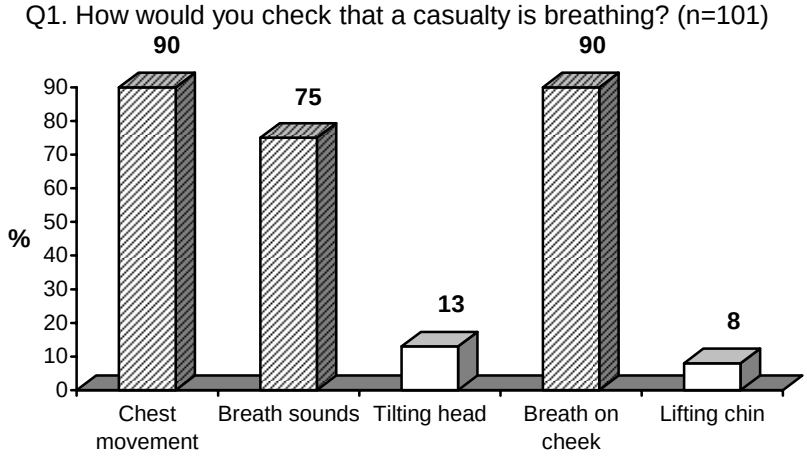


6.6 Checking for breathing

Children were asked where they would put their ear to check for breathing and were given four possible options: the casualty's mouth, leg, ear or chin. Nearly all children (98%) correctly answered that they would check by putting their ear to the person's mouth. Only two children responded to the 'chin' option. Children were asked a

second question about checking for breathing in which they were asked to demonstrate their knowledge of how to look for specific signs that a casualty was breathing. Their responses are shown in Figure 6.6.1. Out of five possible answers, three were correct. All children could identify at least one sign, with 69% correctly identifying all three, 22% two signs and 9% only one sign. It is evident from Figure 6.6.1 that children are less likely to listen at the casualty's mouth for breath sounds and more likely to look for chest movements and feel for the casualty's breath on their cheek.

Figure 6.6.1 Looking for signs that a casualty is breathing



6.7 Opening an airway

All children correctly identified that the airways are opened by lifting the chin and tilting the head back. When asked a further question about whether or not the head should be tilted if the casualty had a neck injury, 92% correctly answered 'no' with 5% responding that the head should be tilted, and 3% did not answer this question.

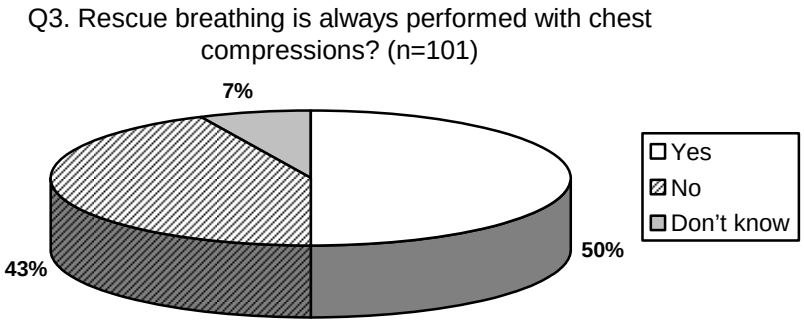
6.8 The recovery position

There were two questions that asked about the recovery position. The first question asked the children to identify the recovery position from two similar pictures. Ninety seven percent of children circled the correct picture, with 3% incorrectly answering and 1% not answering the question. When asked if the casualty should be put in the recovery position to start rescue breathing, 89% correctly answered that the casualty should not, with 9% answering that they should and 2% indicating that they did not know. This pattern of response suggests that a small proportion of children, whilst able to identify a person who is in the recovery position, are less clear about its significance in respect of the performance of ELS.

6.9 Rescue breathing

Three questions of varying degrees of complexity were asked about rescue breathing. All children (101) correctly answered that rescue breathing should be given mouth to mouth. A further question asked about the *first step* in rescue breathing and gave four possible answers. Seventy eight percent of children correctly identified 'keep airway open' as the first step in rescue breathing, with 13% wrongly identifying 'get help' as the first step. Four percent and 6% of respondents identified 'take a full breath of air' and 'blow into casualty's mouth' respectively. The children's responses suggest that just under a quarter of children would not be able to perform rescue breathing adequately because they do not know the first step in the process. A third question asked if rescue breathing was always performed with chest compressions. Figure 6.9.1 illustrates the children's responses to this question. Forty three percent of children identified correctly that rescue breathing can be performed on its own. However, it is evident that over half of children (57%) did not know the correct answer to this question. The implication of this response is that some children may inappropriately apply chest compressions.

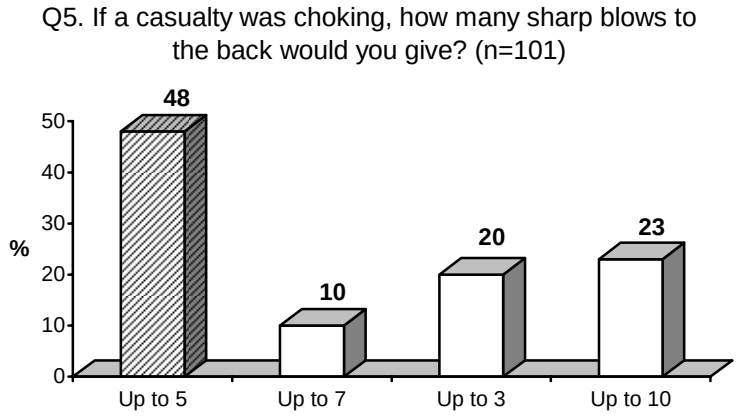
Figure 6.9.1 Rescue breathing and chest compressions



6.10 Dealing with choking

When asked to identify the correct number of blows to the back to administer to a choking person, 48% correctly identified the right answer of up to five blows. However, 53% of respondents did not identify the correct answer. Thus, a larger proportion of the sample of children would administer the incorrect number of blows than would administer the correct maximum number. However, it should be noted that the practical choking exercises were included in module three and were not covered by all schools in the study. Figure 6.10.1 illustrates the children's responses to this question.

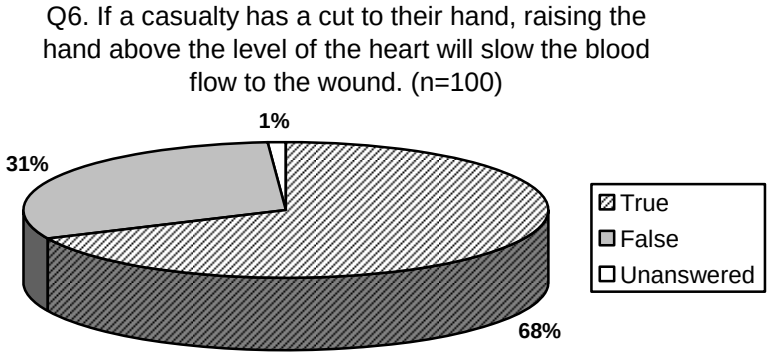
Figure 6.10.1 Number of blows to the back in a choking person



6.11 Slowing blood flow

Children were asked if a casualty had a cut to the hand and raised the hand above the level of the heart would it slow blood flow to the wound. Figure 6.11.1 illustrates their responses to this question. Sixty eight percent of children responded correctly, with 31% incorrectly and 1% did not answer the question. This pattern of response suggests that just under one third of children would not be able to take steps to slow blood flow.

Figure 6.11.1 Slowing blood flow in the event of a cut to the hand

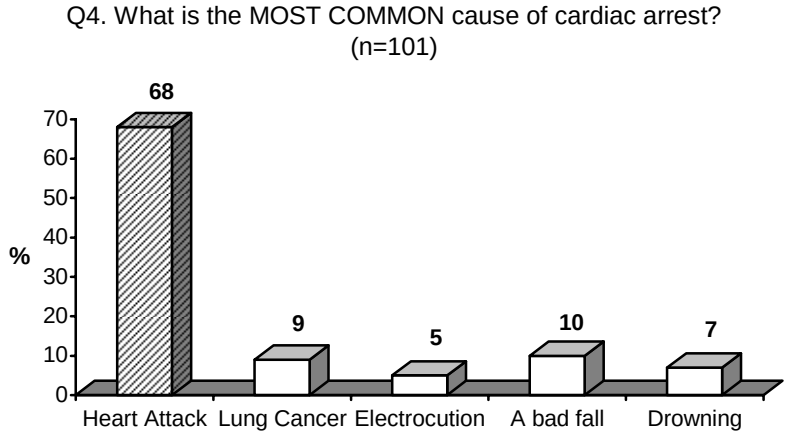


6.12 Cardiac arrest

Children were asked what was the most common cause of a cardiac arrest. Whilst just over two thirds of children (68%) identified 'heart attack' as the correct answer,

just under one third (31%) incorrectly identified a number of other causes and 1% did not answer the question. These results are shown in Figure 6.12.1.

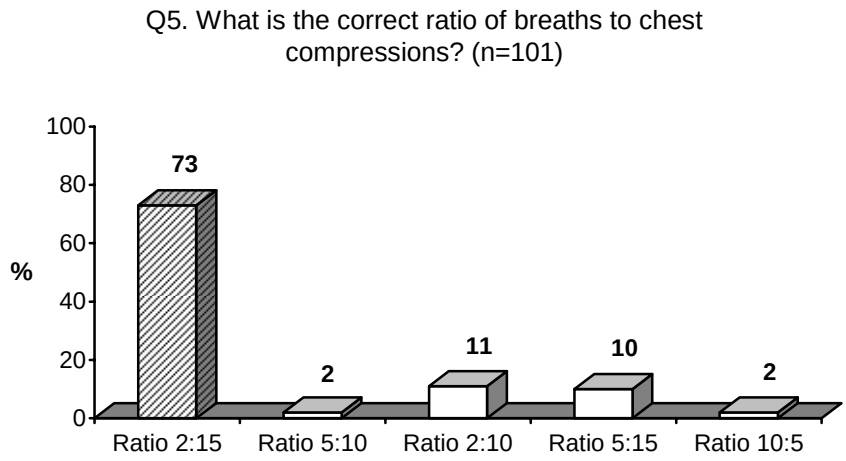
Figure 6.12.1 Causes of a cardiac arrest



6.13 Cardio-pulmonary resuscitation

There were two questions that related to CPR. One question specifically asked what CPR means. Thirty six percent of children responded correctly to this question, 62% incorrectly and 2% did not answer. The second question asked for the correct ratio of breaths to chest compressions and gave five options. Seventy three percent of children identified correctly the ratio of 2:15. These results are summarised in Figure 6.13.1. Thus, whilst just over a third of children did not know the meaning of CPR, just under three quarters of them were able to recall the correct ratio of breaths to chest compressions.

Figure 6.13.1 Children's knowledge of the ratio of breaths to chest compressions



6.14 Conclusion

Generally, the children in this study demonstrated relatively high levels of knowledge about ELS. For most questions, between two thirds to three quarters of children in the study responded correctly. In part, this might reflect the relatively recent exposure of the children to ELS skills training. On the assumption that relatively few children in the sample were likely to have had experience of ELS training outside of school, this reflects the impact of the Heartstart UK initiative delivered in the school setting on children's knowledge.

The children's responses revealed four areas where their knowledge was weaker. The question on choking was correctly answered by less than half the children in the sample (48%). However, in part, this might reflect the fact that in many schools this subject had apparently not been covered comprehensively. Two of the questions relating to CPR (the meaning of CPR and whether or not rescue breathing was always performed with chest compressions) were also not correctly answered by many children, a finding which suggests that this area of ELS training might pose difficulties for children.

Of more concern perhaps were the children's responses to the question on the first rule for helping in an emergency, given its importance in relation to all other aspects of ELS training. Whilst this might seem a fairly straightforward rule to teach and learn, understanding the *sequence* of actions is fundamentally important. Furthermore, thinking about the order in which actions should be carried out must be

understood by children within the context of an appreciation of the need for prompt action, balanced against the necessity for a considered response. This kind of thinking requires integrating a number of different considerations as well as the necessity of acting rationally in what are likely to be emotionally charged situations. This fairly high order level of cognition and response is challenging for both adults and children. However, there is more likelihood of individuals responding appropriately in these situations if training has been comprehensive and skills have been learnt to the extent that they are routinised into behaviour. This again highlights the need for any training programme to be structured and resourced to allow regular repetition of skills and adequate opportunities for refreshing such learning. Repetition also needs to be presented appropriately to children and young people such that they appreciate this aspect of training in ELS and do not see it as unnecessary because they have ‘done it before’.

Chapter 7
Findings from the observations

7.1 Introduction

This Chapter presents the findings from the observation of 36 children and young people performing ELS (28 primary school children and 8 secondary school children). These findings complement those from Chapter 6, since whilst knowledge about ELS is important, the ability to perform ELS skills is the primary outcome from the teaching of ELS to children and young people. The findings are presented in relation to the six ELS skills the children were asked to perform, with some commentary on those aspects of skill performance children found most difficult.

7.2 Opening an airway

The first task the children were asked to perform was to open an airway on the manikin. This is one of the principal skills on which many of the other skills, such as rescue breathing and CPR, are based. Thirty one children (86%) opened the airway correctly by gently tilting the head backwards and lifting the chin. Errors that were made by some children were not correctly tilting the head and not checking for obstructions in the mouth.

7.3 Checking breathing

Thirty two participants (89%) were able to perform this skill correctly. Two primary school children and two secondary school pupils were unable to perform this skill correctly. No child identified looking for movement in the chest as a method of checking for breathing, whereas all of those observed were able to identify listening and or feeling for breath as a way of checking signs of breathing. Six participants were able to offer a verbal explanation while performing this skill.

7.4 The recovery position

Overall, 49% (17 out of 35 participants, as one child refused to perform this activity) of children performed this skill correctly. This was the skill that caused the greatest difficulties for children, which were related to the positioning of the arms, the legs and the tilting of the head to open an airway. In one primary school only two children opened an airway and all had some difficulty in placing the hands in the correct position, often resulting in the casualty being pulled in the wrong direction. These difficulties are consistent with the views they expressed in the focus groups.

However, most children (97%) who completed questionnaires correctly identified the recovery position in the questionnaire. This suggests that children have some comprehension of the recovery position but performing the skill is difficult. Putting a casualty in the recovery position is a relatively complex skill in that there is a sequence of movements which involved different parts of the body and which must be completed in the correct order.

7.5 Rescue breathing

Rescue breathing was accurately performed by 69% of children (25 out of 36). The main problem primary school children encountered in trying to perform this skill was getting a mouth seal on the resuscitation manikin. This was a concern for many children who had talked about the problem in the focus groups. Other omissions by children were failing to pinch the nose, tilt the head or check to see if the chest rose.

In one primary school, all eight of the children observed correctly performed rescue breathing. However, this group had just completed the Heartstart UK programme. Most of the children observed performed rescue breathing with some degree of accuracy, with the main problem being the failure to perform one of the steps to rescue breathing. However, this did not affect their ability to make the chest rise on the resuscitation manikin. Among the children who failed to gain an adequate mouth seal, just one child was unable to make the chest rise. Similarly, those children who failed to pinch the nose during rescue breathing were also able to make the manikin's chest rise. Three of the participants gave the incorrect number of breaths.

Performing rescue breathing posed problems for some children. Observing and listening to the children suggested that this might well be because of the structured and staged nature of the skill, which necessities a series of inter-linked steps. Children could also be somewhat distracted if they encountered difficulties with one particular stage, for example, getting a mouth seal, and needed some encouragement to proceed.

7.6 Performing cardio-pulmonary resuscitation

Cardio-pulmonary resuscitation was correctly performed by 64% (23) of children. Difficulties were evident in respect of pinching the nose, positioning the hands and performing the correct ratio of breaths to compressions. There was little observed difference in the performance of rescue breaths performed alone or with chest compressions, such that those who were able to perform rescue breaths were

equally competent when performing rescue breaths with chest compressions. Most of those observed were able to compress the manikin's chest sufficiently in order to make the manikin click, a sign that the chest has been suppressed sufficiently. However, many children rushed while placing their hands on the manikin's chest and failed to find the correct position.

The primary school children performed CPR with a high level of accuracy, with only three children incorrectly placing their hands for chest compressions, and with most of the inaccuracies relating to the incorrect ratio of breaths to compressions. In two of those cases the number of breaths was correct but the compressions were incorrect and in four cases both the breath and compressions were incorrect. In only one case was both the ratio and the hand positioning incorrect.

7.7 Dealing with choking

Dealing with the effect of choking was observed in one primary school and one secondary school. This is a skill that is introduced in Module 2, although the procedure for performing this skill on a manikin (Choking Charlie) is not practised until Module 3. Therefore, with the exception of one primary school group where choking was a subject that was covered in some detail, the primary school groups were not observed using the choking manikin.

The choking procedure relates to both the blows to the back of the choking manikin and the procedure for abdominal thrusts. The participants in the primary school were asked to describe how they would deal with a choking incident. All four participants were able to describe both procedures, however one participant gave the incorrect number of back blows that should be delivered. The secondary school participants were asked to perform back blows to the manikin. Only three out of the eight participants (38%) leaned the manikin forward before starting the procedure. When asked to perform an abdominal thrust on the choking manikin, all of the participants were observed to have difficulty in placing their hands and arms around the manikin in order to carry out the procedure. Some young people also had difficulty exerting sufficient pressure with the hands during the thrust manoeuvre without moving the manikin. Three of the participants were able to dislodge the object in the manikin's mouth, one with abdominal thrusts and two with back blows. All of the young people performed the correct number of blows to the back.

7.8 Recognising the warning signs of a heart attack

The secondary school children were asked to identify how they would recognise the warning signs of a heart attack. All eight participants of the group were able to name one symptom, with six participants able to name two symptoms. When asked how they would assess signs of circulation seven participants were able to identify the pulse and one participant did not know.

7.9 Serious bleeds

The secondary school children were asked to describe how they would deal with a serious bleed: the example that was used was a bleed to the leg. All of the participants were able to describe how they would apply pressure to the wound to stop bleeding. Four of the participants suggested using a clean cloth to cover the wound and apply pressure and one participant suggested raising the leg also to slow circulation. One participant correctly described all the procedures to deal with a serious wound to the leg.

7.10 Conclusion

With the exception of the recovery position, where less than 50% of participants correctly performed the procedure, most of the participants were able to perform ELS skills with a good level of accuracy. This was particularly the case with regard to opening an airway and the ability to check for breathing, where the level of accuracy was high. While some of the primary school children seemed nervous at performing ELS skills, the secondary school group exhibited confidence in their abilities. This finding is consistent with the findings from the focus groups reported in Chapter 6. However, it was evident that, given encouragement, many of the primary school children performed the skill at least adequately.

Whilst observations were carried out on a relatively small number of children (36), some consistency with the findings from the focus groups was evident. For example, there were differences in the apparent confidence with which older children approached and performed the tasks. Encouraging the development of confidence in young children to perform ELS skills is therefore important as this will increase the likelihood of children acting in an emergency situation. Such confidence is likely to develop in parallel with competent skill development but teachers might actively address this in the teaching of ELS. A further finding that was evident in both the observations and the focus group was the issue of putting a casualty in the recovery position. The evidence from this study suggests that structured skills (such as putting a casualty in the recovery position) that are dependent on a sequence of

actions pose the most difficulties for children. This is perhaps not a surprising finding. However, it illustrates that the teaching of such complex skills, particularly to younger children, needs to be approached carefully and, furthermore, might be assisted by the development of additional teaching resources.

Chapter 8
Discussion

8.1 Local uptake and implementation of the Heartstart UK scheme

This study has shown that the Heartstart UK programme was successfully integrated into the pilot schools as part of their healthy schools work. This is an important finding since previous work by MacGregor (2001) found that schools reported difficulty in incorporating new initiatives, such as Heartstart UK, into an already crowded curriculum. Understanding the factors that enabled successful integration in the pilot schools is therefore important and is discussed further in this Chapter. Consideration is also given here to understanding the impact of the Heartstart UK initiative in the pilot school settings.

8.2 The NHSS as a vehicle for enabling the delivery of Heartstart UK

The findings from this study suggest that the NHSS provided a vehicle through which the pilot schools could focus on, and make progress towards, their specific, identified priorities: in this case, the theme of safety in general and the teaching of ELS in particular. The NHSS process requires schools to identify priorities, based on local needs, and for those schools that identify safety as a priority, the opportunity to access Heartstart UK resources, including access to training, is evidently an attractive one. Furthermore, given that there is some evidence to suggest that the safety theme is a less popular one than many of the others (ROSPA, 2001), being able to access the Heartstart UK resources may itself act as an incentive for schools to prioritise safety issues – a matter of some importance in the current climate. The NHSS process also requires schools to gather evidence of progress towards targets based on priorities and the delivery of Heartstart UK allows the generation of such evidence. Participating in the healthy schools scheme and signing up to the Cheshire Standards also generates a reason for participating in the teaching of ELS, which is important in terms of justifying the inclusion of additional activities and materials in situations where there is pressure on the curriculum. A further outcome of this is that there is greater likelihood of generating a whole school approach to healthy schools work in general and the teaching of ELS in particular.

That schools, including primary schools, are an appropriate setting for learning skills in ELS is evident from the responses of the children and young people who participated in the focus groups. It was evident that the majority of those who were

taught ELS through the Heartstart UK programme had no previous knowledge of ELS, and therefore, without being exposed to the Heartstart UK initiative whilst at school would have been unlikely to develop these skills. To this extent the BHF is right to assert that children and young people can give valuable assistance in an emergency if taught the appropriate skills and, furthermore, that the school is an ideal setting in which to teach them (BHF, 2003).

It is evident from this study of local implementation that the Heartstart UK initiative fits well with one of the underpinning principles of the NHSS in respect of the requirement for healthy schools work to be based on a whole school approach (DfES, 2001). It was evident in this study that the teaching of ELS was linked to a number of curriculum areas, for example, science and citizenship. In primary schools, this provides opportunities for teachers to make connections in different subject areas, as well as beyond the classroom, thus reinforcing learning as the occasion allows. Furthermore, school settings, particularly primary schools, lend themselves to the delivery of a teaching package that has an integral practical component. Thus, children can be exposed to the practical elements of ELS training in a safe environment, supported by quality materials and appropriately trained staff.

The Heartstart UK initiative and teaching pack enable schools to prioritise safety as a theme, with a particular focus on the teaching of ELS skills. Furthermore, the support provided by the BHF in terms of training and resources contributes to ensuring the quality of healthy schools work, a matter that has been of some concern in the past (Rivers et al., 2000).

8.3 Flexibility in the delivery of Heartstart UK

Whilst it appears that the NHSS provided the justification and framework for delivery of ELS training to pupils, teachers also reported that the integration of the initiative was made easier because it was '*flexible'*. By this teachers meant that:

- it could be linked to a number of curriculum subjects, most commonly science and PSHE;
- it could be delivered in different ways – blocks or one session a week – depending on other factors;
- teaching resources could be adapted according to teacher preference and children's abilities.

Thus, teachers could exercise some degree of control over the delivery, timing and format of sessions, using the available resources according to individual preference. Most of the schools in this study chose to offer the Heartstart UK programme as a four week training package, primarily due to the availability of the resuscitation equipment. Increasing access to this equipment would give schools a greater degree of flexibility in its use as well as enable the revision of skills, which at the time of study was not possible. However, there was some indication that there was less flexibility in secondary schools than in primary schools. This finding is perhaps unsurprising and certainly accords with the findings from MacGregor's (2001) study.

The teaching resource was largely seen as helpful and as supporting the delivery of ELS training. The use of scenarios was perceived as an enjoyable way of learning, particularly by primary school children. Furthermore, teachers confirmed that this was an effective way of teaching ELS and could be easily adapted to local circumstances and made relevant to children's experiences.

A number of suggestions for improvements to the teaching resource were made, some of which have already been addressed by the BHF, as indicated below:

- larger size posters and charts for display in the classroom which would help in maintaining awareness and contribute to reinforcement and recall of knowledge and skills;
- the use of cartoon style scenarios both as a clearer and more appealing way for children to understand emergency situations;
- the production of a separate teaching resource for secondary schools (Key Stage 4) to reflect their learning and physical abilities;
- the use of a CD-ROM integrated into the training pack in order to expand the learning opportunities for teachers and pupils (now produced in the new training pack from November 2003);
- the development of a website for affiliated schools which improved their access to teaching resources, and which supported them in their teaching of the Heartstart UK programme with ideas and possibly lesson plans, as well as resources that could be downloaded and printed off (such as the activity and skills cards).

8.4 Constraints on the integration of Heartstart UK into the curriculum

As indicated above, access to the manikins was a matter of concern to teachers, particularly since improved access can create greater opportunity for repetition and revision of skills, widely recognised as necessary if children and young people are to retain the necessary level of competence and confidence. (Grants from BHF for manikins are available to all schools. The decision to share equipment was taken locally.) However, the teachers said that they thought the new clustering system for the resourcing of the equipment, implemented in October 2003, would help with this matter. Clustering of schools and sharing access to resources might also enable a more 'joined up' approach to the teaching of ELS to be developed between secondary schools and their feeder primary schools. The secondary school teachers involved in this study reported that they had experienced some problems in teaching ELS because many pupils reported that they had completed the Heartstart UK scheme in primary school. This was similar to the situation reported in MacGregor's (2001) study. The development of a coherent curriculum in ELS that spanned the age range and enabled repetition of skills would be a worthwhile development of the initiative locally.

Adequate training for teachers to deliver the Heartstart UK programme is essential to the success of the initiative. Three key issues emerged from this study in relation to training. Firstly, it is important to recognise that teachers themselves may lack confidence in delivering the Heartstart UK programme. Sound training, supplemented with adequate opportunities for revision, well-supported with resources, is likely to strengthen teachers' confidence in their ability to deliver a quality, and effective, programme. Whilst current provision in this regard was generally rated highly, for those teachers without a first aid certificate the training was often experienced as difficult. Locally, the requirement for teachers to have a first aid certificate before they commence Heartstart UK training has been introduced, but this is not current BHF policy. However, unless there is some local provision for first aid certificate training this will reduce the number of teachers who can become Heartstart UK trained teachers, which, in turn, will reduce the number of children trained in ELS in each year in the locality. Furthermore, opportunities for teachers to access training on a regular and more frequent basis would assist affiliated schools to maintain the prescribed number of trained teachers (two) when a trained teacher leaves. This is an important point since the provision of confident and well-trained teachers in ELS is an important determinant of the quality of experience they can provide to children and young people.

8.5 Outcomes of the ELS training programme

The intended outcomes of the programme primarily relate to children and young people's knowledge and skill to perform ELS. However, there were a number of other outcomes that were revealed in this study, which are important to consider given their possible relationship to the success of the programme.

Children and young people unanimously described learning ELS skills through the Heartstart UK programme as *'fun',* in line with previous work on Heartstart UK (Lester et al., 1994; MacGregor, 2001). Pupils said this was because of the practical, hands-on approach to the delivery of the programme, which also appeared to have a positive impact on the level of understanding of ELS and increased the level of competency that the children and young people demonstrated in performing ELS skills. Maintaining a strong focus on the acquisition of skills through practical work is therefore an important aspect of the initiative, underlining the importance of access to manikins on a regular basis.

Both teachers and children expressed the view that learning ELS skills was a valuable and worthwhile activity. It was evident from the children's comments that the learning of ELS skills had contributed positively to their self-esteem and self-worth, and encouraged a sense of responsibility, as well as increasing their confidence about how to act in an emergency situation. These outcomes of the programme are worthwhile in themselves, as well as revealing how the teaching of ELS can be a vehicle for integrating aspects of citizenship education. For example, it is evident that the learning of ELS skills can empower children and young people to act responsibly and usefully in community settings. Given the current emphasis on citizenship education as part of a revised non-statutory PSHE curriculum, as well as a revised curriculum framework by September 2002 (Qualifications and Curriculum Authority, n.d.), this is an important finding as it emphasises the links between Heartstart UK and other school-based developments to which schools will have to respond. Given that citizenship is primarily about "participation and responsible action" (Ofsted, 2005, p. 6), the teaching of ELS through the Heartstart UK initiative could make a valuable contribution to a school's programme on the subject.

Other work has shown that confidence and motivation to perform ELS is important in emergency situations (Lester et al., 1996; MacGregor, 2001). Most of the children in this study had received ELS training relatively recently, yet still expressed some concern about their ability to perform the appropriate skill in a real life situation,

including the issue of actually doing more harm than good. This latter point is important as it is likely to make children and young people more reluctant to put themselves forward to help than they would otherwise be. This was particularly the case with younger children who also expressed some concerns about their own safety in such situations. There are several points to be made about this finding. Firstly, it again points to the need to enable repetition of skills learnt, in a timely manner, to allow children and young people to refresh themselves and reinforce earlier learning. The training of children and young people as peer educators might be one way by which this could be accomplished. Secondly, some thought might be given to integrating the concerns of younger children about their own safety into the teaching materials as wider learning points about safety in general. Thirdly, analysis of observations revealed that the performance of some skills posed more problems than others for children and young people. Putting a person in the recovery position and performing the correct number of compressions to breaths were the least well-performed skills. Further thought into the teaching of these skills and how improvements might be incorporated into the teaching materials, might help address these issues. Finally, it was evident that whilst children and young people's knowledge about ELS was generally of a fairly high level, this was perhaps not reflected in their ability to perform ELS skills. This suggests that when presented with options, such as in the questionnaire, children can be prompted to respond correctly. However, the performance of skills on a manikin is more comparable to a real life situation in which there is no prompting. Previous work has discussed the relationship between theoretical knowledge and skill performance (Lester et al., 1996). The findings from this study would suggest that skill performance should always be prioritised. However, there is some evidence to suggest that the difficulties demonstrated and articulated by children and young people in this study are not uncommon.

In terms of knowledge, the processes of ELS were, in the main, well understood by the majority of children and young people. The areas where the level of knowledge was less sound was in relation to how to deal with choking - not a surprising finding given that few children had covered this fully - and the use of CPR. Skills which involved a sequence of separate steps also tended to pose more problems for children, again, perhaps not a surprising finding. Thus, putting a casualty into the recovery position proved to be difficult for a number of children. This underscores the importance of repetition for more complex practical skills, such that the sequence of actions becomes routinised and can be performed quickly and without recourse to

thought. It is worthy of note at this juncture that many primary school children spoke about regular revision of the Heartstart UK material and how this had helped them remember what to do in certain situations as well as help maintain their confidence. Reviewing teaching materials in the light of these comments might be worthwhile.

8.6 Conclusion

This small-scale study of local implementation has revealed the ways in which the Heartstart UK initiative has been integrated into healthy schools work using the NHSS as a framework for delivery. This has enabled participating schools to prioritise safety as an issue. The flexibility of the Heartstart UK initiative and the quality of resources and training were perceived by teachers to be important in enabling schools to integrate the initiative into the school setting. Successful integration is likely to be important in generating an effective learning environment for children and therefore be more likely to lead to the desired outcomes. It was evident that whilst children developed ELS skills, they also reported that they felt more confident to act appropriately in emergency situations and that this lead to feelings of self-worth. This suggests that the Heartstart UK initiative could have an important role in contributing to citizenship education. This study has also revealed the difficulties children and young people can experience with ELS skills learning and has identified a number of issues that might be worthy of further consideration in any future revisions of the teaching materials for schools.

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Appendix 1

Information sent to head teachers to recruit sample of schools to the research project

Letter to head teachers (on Chester College/CPHR headed notepaper)

Date

Dear head teacher (name)

Research Project - Emergency life support training for school children: exploring local implementation and outcomes of the HEARTSTART UK scheme.

I understand that you have recently received a letter from Ms. Cindy Cawley, Health Promotion Specialist for Cheshire West Primary Care Trust, about a research project concerned with the HEARTSTART UK scheme. The Centre for Public Health Research has been commissioned by the British Heart Foundation (BHF) to explore local implementation of the initiative in the ten Ellesmere Port schools that have taken up the scheme as part of their work on the National Healthy Schools Standard. I am now writing to you, as one of the researchers on the project, with some further information about the project – in the form of the enclosed project proposal that was submitted to the BHF.

It would be helpful to me if we could meet, perhaps with your named HEARTSTART UK co-ordinator, to discuss the project and what this would involve for you and your school. Stephanie May, the researcher working with me on the project, will contact you within two weeks of receipt of this letter to try to arrange a mutually convenient time.

Please do not hesitate to contact me if you have any questions regarding the research project.

Yours sincerely

Dr. Miranda N. Thurston
Director
Centre for Public Health Research
01244 220367

Emergency life support training for school children: exploring local implementation and outcomes of the HEARTSTART UK scheme within the context of the NHSS
Outline proposal

Background and rationale

HEARTSTART UK is an initiative developed by the British Heart Foundation (BHF), which has the aim of promoting and developing Emergency Life Support (ELS) training throughout the United Kingdom. The main emphasis is on the development of skills necessary to perform the techniques of ELS. The initiative has been funded for eight years by the BHF. There are currently approximately 700 schemes situated in a variety of locations: prisons; leisure centres; businesses; and schools. This research proposal focuses on implementation in the school setting.

One specific aim of the initiative is to facilitate the integration of ELS training into the school curriculum. To this end, a teaching resource has been developed to assist schools in implementing the initiative. This comprises three modules, linked to the curriculum, designed to reflect the different learning and physical abilities of children and young people at various ages. The resource is described as flexible in order to allow teachers to adapt materials to suit the abilities of their pupils. The main aim of the teaching resource is to ensure that children and young people 'leave school with a sound knowledge of how to act in an emergency with skills in ELS' (HEARTSTART UK training pack).

Locally, (within Ellesmere Port and Neston, Cheshire), the scheme has been piloted in ten schools: eight primary schools and two secondary schools. All of these schools have signed up to the National Healthy Schools Standard (NHSS) and have chosen emergency life skills development, using HEARTSTART UK, as one of their priorities. This local situation presents an opportunity to explore local implementation in the ten schools by using them as case studies. This research proposal sets out a possible strategy for evaluating the HEARTSTART UK initiative, within the context of the NHSS, in the short to medium term. The study would explore the following research questions:

- To what extent, and in what ways, has the HEARTSTART UK initiative enabled the school to address the teaching of ELS within the context of the NHSS standards?

- To what extent and in what ways has the teaching resource enabled integration of ELS training into the curriculum?

- What has been the 'impact', intended and unintended, of the teaching programme? This will be explored at a number of different levels: individual; group; school; wider community. There may also be some opportunity to explore this research question in relation to short and medium term outcomes.

One possible outcome of the research project may be the development of evaluation materials that could be integrated into the training pack and used routinely by teachers themselves as part of an evaluation process.

Aims

- To describe the uptake of HEARTSTART UK within the context of the NHSS in the ten pilot schools in Cheshire.
- To explore perceptions of the initiative from different 'stakeholder' perspectives.
- To examine the relationship between the NHSS scheme and the rolling out of HEARTSTART UK within each school in order to explore the extent to which HEARTSTART UK has enabled each school to achieve specific priorities.
- To assess the extent to which the objectives of the ELS training initiative have been achieved at an individual and school level.

Objectives

- To examine the dynamics of the relationship between the NHSS scheme and the rolling out of HEARTSTART UK, from a variety of stakeholders' perspectives.
- To assess the pattern of uptake of training in relation to: school type (primary/ secondary/catchment area) role/subject area/discipline of trained teachers; place(s) of integration within the curriculum; year group trained.
- To explore head teachers' perceptions of the initiative.
- To explore trained teachers' perceptions of the initiative.
- To explore the perceptions of those children who have participated in the training.
- To determine the immediate and medium term impact of ELS training in relation to stated HEARTSTART UK objectives, on those children who have participated in the initiative.
- To determine the relative role of HEARTSTART UK in relation to the learning of ELS.
- To determine the relative role of other factors in children's lives likely to contribute to the learning of ELS.

Methodology

The particular approach proposed here is a 'mixed portfolio approach' (Beattie, 1995)[2], which seeks to compile a range of different kinds of evidence, both quantitative (outcome) and qualitative (process) data. The emphasis will be on trying to develop an understanding of why an initiative is/is not working, for whom, and in what circumstances. This model also draws on the idea of 'pluralistic evaluation' which emphasises that 'success is a pluralistic notion ..... not a unitary measure' (Smith and Cantley, 1985, p.173)[3]. Thus, consideration has to be given to how the different stakeholder groups involved view success. Consequently, pluralistic evaluation embodies the principles of methodological triangulation with data being collected from different sources (Øvretveit, 1998).[4]

The main framework and focus for the study will be developed in relation to the aims and objectives of the initiative, particularly in relation to the teaching resource. This will ensure that it is evaluated in relation to its *own* goals rather than those imposed by outside researchers.

The empirical stage of the study will be preceded by a review of the relevant literature.

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[2] Beattie, A. (1995). 'Evaluation in community development for health: an opportunity for dialogue.' *Health Education Journal,* vol. 12 (1), pp 91-101.

[3] Smith, G. and Cantley, C. (1985). *Assessing health care: a study of organisational evaluation.* Milton Keynes: Open University Press.

[4] Øvretveit, J. (1998). *Evaluating health interventions*. Buckingham: Open University Press.

At this point in time it is difficult to state the precise study design. However, it may be possible to build in an element of comparison in either of two ways. Firstly, it may be possible to identify similar 'control' schools, in which HEARTSTART UK has not been integrated into the curriculum. Secondly, over time it may be possible to adopt a 'pre and post intervention' study design in schools, which intend to take up HEARTSTART UK. Both of these possibilities would enable a more robust evaluation of the initiative that would supplement the case study, exploratory approach. In part, the choice of study design is determined by the resources available for the study.

The main methods of data collection envisaged will be:

- In-depth interviews with head teachers.
- In-depth interviews with trained HEARTSTART UK teachers.
- Focus groups with children/young people who have participated in the scheme.
- Short questionnaire composed of predominantly closed questions to examine learning that has taken place.
- Observation of children's performance in ELS at two points in time.

Access and other ethical issues

This research project is entirely dependent on collaboration with, and negotiating access to, local schools. The research carried out by the CPHR adheres to the College's Guidelines for the Ethical Conduct of Research. Ethical approval would be sought from the appropriate ethics committee. Participation in the project would be by voluntary consent and all quantitative and qualitative data would be treated confidentially. Furthermore, in the reporting of findings no information will be used that would allow the identification of individuals or schools.

Appendix 2

Interview schedule for Heartstart UK trained teachers

Interview schedule for Heartstart UK trained teachers

- The school's involvement with the National Healthy School Standard, their priorities, when and why they 'signed up'.
- Why they choose Heartstart UK and ELS as one of their priorities.
- How it has been integrated into the curriculum.
- How this has 'worked' in practice.
- Views on its intended and unintended consequences, including the perceived impacts on children and young people.
- Views on Heartstart UK as an initiative, particularly the resources available to schools, including the training of teachers, teaching pack and manikins.

Appendix 3

Focus group schedule for children and young people

Focus group schedule with children and young people

- Knowledge of and training in ELS before Heartstart UK was delivered in the school (and where from).
- Narratives about what they have done in school as part of HEARTSTART UK and ELS (when/how/with whom).
- Views about such activity and work.
- What they think Heartstart UK has taught them (immediate and longer term).
- Thoughts and feelings about using ELS in particular situations.

Appendix 4

The questionnaire

The questionnaire was printed in colour and produced in small booklet format.



HEARTSTART

Please answer all the questions you can.

Module One

Q1. How might you know there is an EMERGENCY and there is a need for help? (Tick as many as you think are right.)

- ❑ You see someone fall off their bike and they are not moving.
- ❑ You are in the park and someone trips over and has a bad cut to their head.
- ❑ Your friend has fallen in the playground and has a small graze on their knee.
- ❑ You smell smoke from your neighbour's house.
- ❑ A strange cat comes into your garden.

Q2. Which of these things could you do to get help? (Tick as many as you think are right.)

- ❑ Phone 999
- ❑ Shout for help
- ❑ Run away and hide
- ❑ Ask a friend to get help
- ❑ Panic
- ❑ Do nothing

Q3.What is the FIRST rule to helping in an emergency? (Circle one)

Give help

Stop and think

Look for danger

Get help

Q4. When someone is UNCONSCIOUS is it the same as when they are SLEEPING? (Circle one)

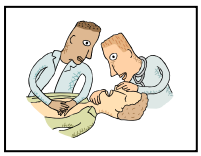
Yes

No

Don't Know

Q5. In an emergency, if you think someone is not breathing you could check this by putting your ear to their… (Tick one)

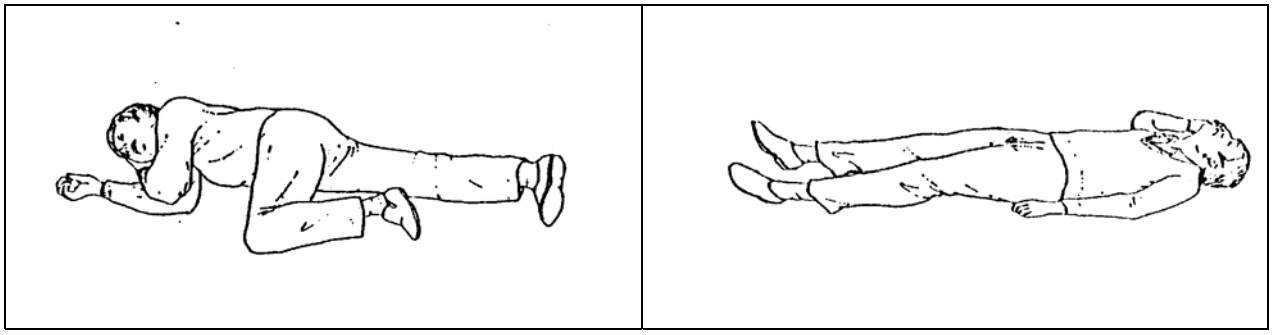
- ❑ Mouth
- ❑ Leg
- ❑ Ear
- ❑ Chin



Q6. The airway is opened by lifting the chin and tilting the head back. (Circle one)

True or **False**

Q7. Circle the picture you think shows the Recovery Position.



Module Two

Q1. RESCUE BREATHING is usually given by mouth to mouth. (Circle one)

True or **False**

Q2. Which of these steps in rescue breathing would you do FIRST? (Tick one)

- ❑ Get help
- ❑ Keep s open
- ❑ Take a full breath of air
- ❑ Blow into casualty's mouth

Q3.The casualty should be put into the recovery position to start rescue breathing. (Circle one)

Yes

No

Don't know

Q4. Looking for movement in the chest is one way to check for signs of life. (Circle one)

True or **False**

Q5. If a casualty was choking, how many sharp blows to the back would you give? (Tick one)

- ❑ Up to 5
- ❑ Up to 7
- ❑ Up to 3
- ❑ Up to 10

Q6. If a casualty has a cut to their hand, raising the hand above the level of the heart will slow the blood flow to the wound. (Circle one)

True or **False**

Module Three

Q1. How would you check that a casualty is breathing? (Tick as many as you think are right.)

- ❑ Looking for chest movements
- ❑ Listening at mouth for breath sounds
- ❑ Tilting the head backwards
- ❑ Feeling for breath on your cheek
- ❑ Lifting the chin

Q2. If the casualty has a possible neck injury, you should tilt the head. (Circle one)

True or **False**

Q3. Rescue breathing is always performed with chest compressions. (Circle one)

Yes

No

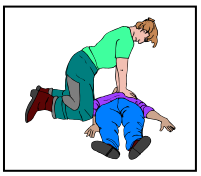
Don't know

Q4. What is the MOST COMMON cause of cardiac arrest? (Tick one)

- ❑ Heart attack
- ❑ Lung cancer
- ❑ Electrocution
- ❑ A bad fall
- ❑ Drowning

Q5. What is the correct ratio of breaths to chest compressions? For example, if you would give 3 breaths to 10 chest compressions the right answer would be 3:10 (tick one)

- 2:15
- 5:10
- 2:10
- 5:15
- 10:5



Q6. CPR means Cardiopulmonary Rescue. (Circle one)

True or **False**

Appendix 5

The observation schedule

HEARTSTART OBSERVATION SHEET

	Tick if completed	Task related factors Body language/facial expression
School		

Open an airway			
Check breathing			
Turn a casualty into the recovery position			
Perform rescue breathing (on a manikin)			
Know the basic principles of dealing with chocking			
Know the basic principles of dealing with serious bleeding			
Assess for signs of circulation			
Perform chest compression (on a manikin)			
Perform rescue breathing together with chest compression – (CPR)			
Recognise the “warning signs” of a heart attack and know what to do			

Observation
Physical setting

Task-related Factors

To what extent do the children/young people:

- show that they understand what is being asked of them
- show enthusiasm and interest in what they are being asked to do.
- behave appropriately- if not how is this anticipated and controlled.
- cope with the task they are being asked to undertake.
- co-operate with the members of staff/researcher conducting the observation.
- appear to be relaxed in what they are doing.
- move from task to task with ease.
- interact with staff’ other children and researcher present during the observation.

Appendix 6

Consent form and participant information sheet

CONSENT FORM
For children and young people

Title of project: Emergency life support training for school children; exploring local implementation and outcomes of the Heartstart UK scheme.

Name of Researcher: Stephanie May

Please initial box

I confirm that I have read and understand the information on the enclosed sheet dated…….. for the above study ☐

I understand that my child's participation in this study is voluntary and that they are free to withdraw at any time, without giving any reason. ☐

I give my permission for my daughter/son/ward* to participate in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Person giving consent	Date	Signature
_____	_____	_____
Researcher	Date	Signature

*Delete as appropriate

Information for trained Heartstart UK teachers

Emergency life support training for school children; exploring local implementation and outcomes of the HEARTSTART UK scheme.

You are being invited to play a part in a research project by taking part in a semi-structured interview with a researcher to explore your views about HEARTSTART UK. Before you decide if you want to take part it is important for you to understand why the research is being done and what you will have to do. Please take time to read this information and discuss it with other people if you wish. Ask us if there is anything that is not clear or if you would like more information about the research.

Thank you for reading this.

What is the purpose of the research?
As you will probably know, HEARTSTART UK is an initiative developed by the British Heart Foundation (BHF), which has the aim of promoting and developing Emergency Life Support (ELS) training throughout the United Kingdom. The main emphasis is on the development of skills necessary to perform the techniques of ELS. This project focuses on implementation in the school setting.

The research project sets out to explore your views on the following research questions:

- To what extent, and in what ways, has the HEARTSTART UK initiative enabled your school to address the teaching of ELS within the context of the National Healthy Schools Standards?
- To what extent and in what ways has the teaching resource enabled integration of ELS training into the curriculum?
- What has been the 'impact', intended and unintended, of the teaching programme?

Why have I been chosen?
You have been chosen because your school has received HEARTSTART UK training and agreed to its delivery as part of your work towards the National Healthy Schools Standards. Nine other schools in Ellesmere Port that have received the same training are also being asked to participate.

Do I have to take part?
It is up to you whether or not to take part. If you decide to take part you are still free to change your mind at any time without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your access to HEARTSTART UK resources and training in any way.

What will happen to me if I take part?
If you decide to take part, you will be asked to sign a consent form to show that you agree to take part in a semi-structured interview with the researcher. The interview will take about an hour and will give you the chance to tell the researcher what you think about the HEARTSTART UK scheme. You do not have to tell the researcher anything about yourself and you don't have to answer any questions you don't want to. Everything you say will be treated confidentially. If you agree, the researcher will

tape the interview so that what you say will be reported accurately. No names of schools or individuals will be used in any report of the findings.

What are the possible risks and disadvantages of taking part?
There are no foreseen risks or disadvantages to taking part in this research.

What are the possible benefits of taking part?
By taking part you are helping the development of this type of initiative, which may benefit others in the future.

What will happen to the results of the research study?
The findings from the interviews will be combined with the findings from the interviews with other head teachers and teachers and the work with children/young people and be written into a report. This report will be circulated to the British Heart Foundation, who has funded this research project. No schools or individuals who take part will be identified in any written report. *All tapes will be wiped at the end of the study.*

Who is organising and funding the research?
The idea for the study came from members of the health promotion service in West Cheshire who were involved in organising the HEARTSTART UK training. The Centre for Public Health Research at Chester College will organise and carry out the research. The research project is funded by the British Heart Foundation.

Who can I contact for further information?
If you would like any more details about the research, please contact Miranda Thurston or Stephanie May who are both from the Centre for Public Health Research at Chester College. This can be done:

- by telephoning Miranda (01244 220367) or Stephanie (01244 375444 Ext. 2024);
- Emailing either of them: m.thurston@chester.ac.uk; s.may@chester.ac.uk.

Thank you for your interest and co-operation in this research.